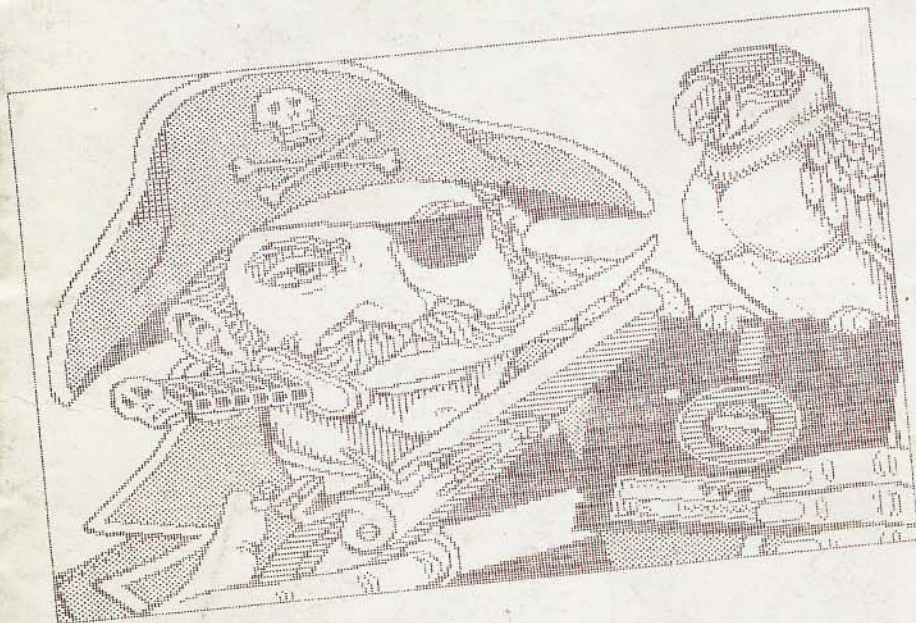


The Australian COMMODORE REVIEW

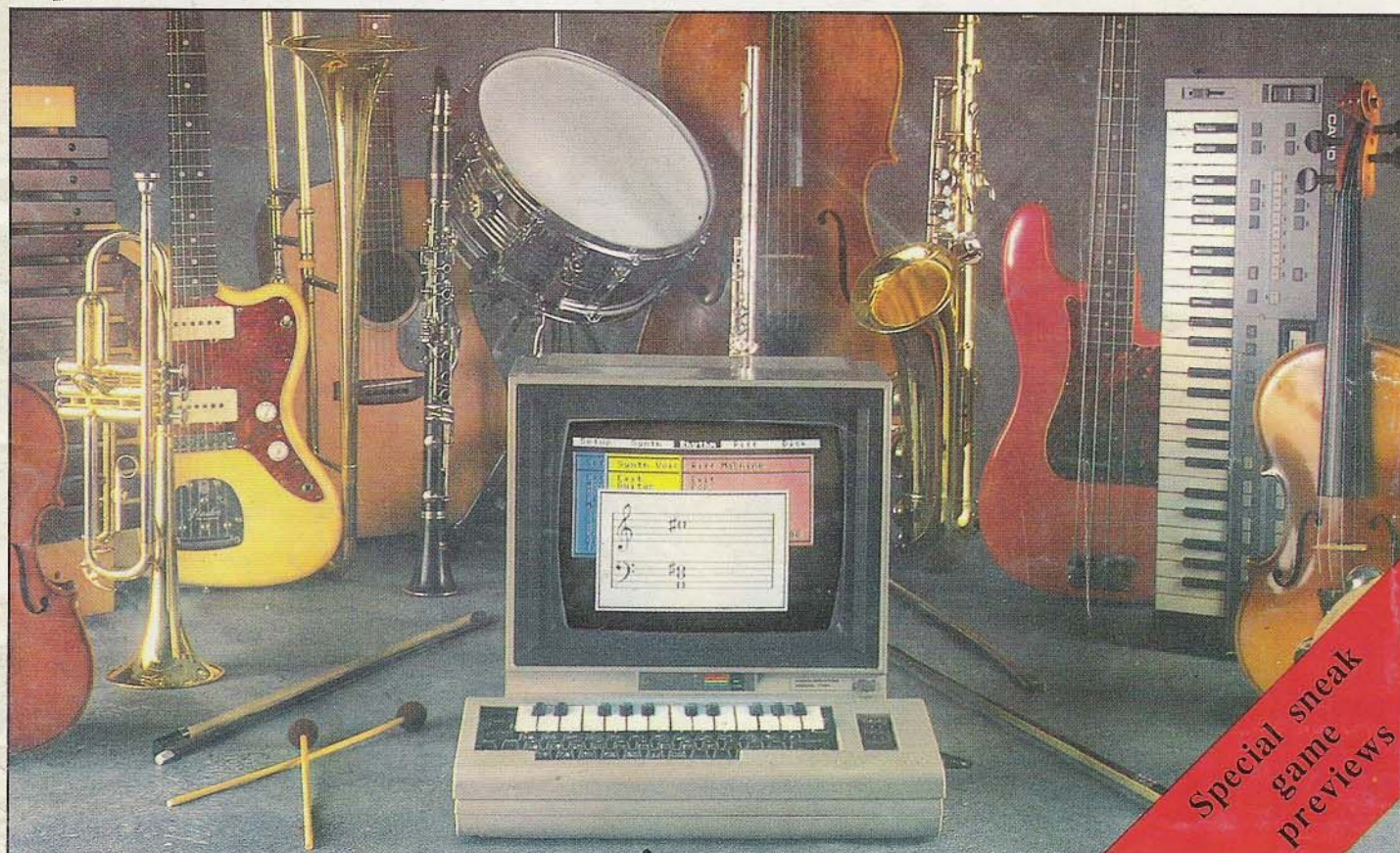


**Music Expander
and Sound Sampler**

**Flexidraw - light
pen graphics
package**

**Parallax - smash hit
arcade adventure**

**Hitchhiker's Guide
map and hints**





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The Australian Commodore Review

Vol 3 No 11
November 1986

FEATURES

Sound Expander - turn your Commodore into a real musical instrument
by Phil Campbell Quality FM music expansion with professional results **4**

Commodore Sound Sampler - the poor man's Fairlight *by Phil Campbell*
Digitise your own sound samples **10**

Put pen to screen with Flexidraw *by Daniel and Andrew Farrell*
A light pen graphics package with pizzazz **11**

Computer Health *by Van Kempen* - Prevention is better than cure **45**

PROGRAMMING

Adventure Creator *by Kyle Arnold* **33**
A true 'PRINT @' statement for your C64 or Vic 20 **47**

REGULAR APPEARANCES

Editorial	2
Ram Rumblings	3
Adventurer's Realm	36
Letters	41
Telecomputing	43

Hot Stuff

Parallax	18
Seven Cities of Gold	20
Rebel Planet	24
Archon	28
Arcade Action	30

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Editorial

Don your sunnies, Bolle no less, and prepare for another fab issue of the *Australian Commodore Review*. It's action packed, and next month promises to be even better. Would you believe that one of our hard-working contributors has already solved *Mercenary II*. Next month there will be a complete review and to blast that right off the page, a complete solution - maps and all.

December will also mark a step in a new direction for us as we attempt to make the Review a more people orientated magazine. After all, computing has a lot to do with people. People do things, say things and generally go to make a lot of interesting reading.

So, from next month on there will be more people. More columns - regular bits and pieces, and more reader feedback - won't there! I hope I can rely on you all for that. To keep our staff on their toes we need plenty of material. Not that we're

short or anything - to the contrary. We just like to know that you do read what we say, and to hear what you think.

So stay tuned for further mind-altering developments, but now, on with this month's look at the world of Commodore.

This month Phil Campbell explores Commodore's music expansion system and the sound sampler.

There's an enlightening look at Flexidraw - a new light pen based graphics package.

And you will find a complete guide to *Hitchhikers Guide to the Galaxy*.

This month's Amiga column didn't quite make it - locust plagues, floods and loss of NRMA no claim bonuses have been blamed. The editor (that's me) saw straight through that, and has since located a new Amiga columnist who inhabits Sydney's northern beaches.

If we can keep his visits to upper city record bars to a minimum, we should get



Andrew Farrell

a regular bit every month from December.

Commodore strides onward, despite the amount of mud that has been slung their way this year. We have every confidence in their progress, and in ours also. Now, on with the show.

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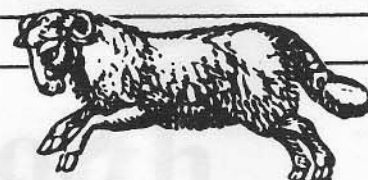
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RAM RUMBLINGS



Knoxcom User Group

A "new" user group known as Knoxcom Inc has been formed.

Although the group has been operating for a couple of years under the Melbourne Central Group, the Knox branch is now independent and in the process of being incorporated. From its humble beginnings at Coonara House, the ever expanding group now meets every second Thursday of the month at the Boronia Community Centre, Park Crescent, Boronia, at 8pm.

New Multi-player Game BBS

A NEW Bulletin Board System, operating in Melbourne, called TI COMM FRP.BBS, is a multi-player, game orientated Bulletin Board which supports multi player games ranging from Dungeons and Dragons to the more modern Outer Space Conflict games.

The system details are as follows:-

System name: TI COMM FRP.BBS (The Castle Mania BBS)

System hours: 6 pm to 12 midnight weekdays
8 am to 12 midnight weekends

Baud rate: 300/300 (one tone connect)

Display: 40 column

Access: Member and Visitor

Telephone no: (03) 379 5123, (03) 379 5123

This BBS is a true variation from the outdated Message Base Systems, and designed to allow all users to become involved in either playing, leading or running a game. The system costs nothing to join, and thus represents good value to all users, including country and interstate callers.

Publink - library link to home computers

Publink, Box Hill/Doncaster Regional Library's innovative dial-in access enquiry link for computer enthusiasts, has been an unqualified success during its first 18 months of operation.

Chief Librarian, Peter Stanfield, said today that word of *Publink* had spread fast.

"We receive a steady flow of calls from metropolitan, country and interstate personal computer operations. We have even had enquiries from as far away as Perth," he said.

Publink is the code name for Box Hill/Doncaster Regional Library's "Public Link" computer access facility. Anyone in Australia with a personal computer system and telephone modem can now dial the *Publink* number and obtain information from the Library's LIBS 100 computerized catalogue system. A caller using *Publink* can enquire about the availability of a book or author without making a trip to the library.

"*Publink* can tell any computer user whether a book is held by the library. He or she can then either come to the library and take it out or they can request the book as an inter-library loan via their own local library," explained Mr Stanfield.

For further information:

Kim Jelbart/Craig Anderson, Phone: (03) 647 9780

Peter Stanfield, Phone: (03) 890 1002.

A case for a new case

Commodore may have built the biggest selling Personal Computer in the world, but they certainly didn't earn themselves any sort of a reputation so far as cute design of the rather dull casing goes.

In fact, the Commodore 64 is almost on par with the long lost TRS-80 range, which don't haunt the pages of too many magazines these days. Their dull grey exterior proved to be a real boon for drab computer enthusiasts and the birth of the stereo typed computer owner.

Today's computer users are of a different breed. They're into graphics, colour and sound.

They hang out at Spagos night club and eat lunch at the Hot Spud sandwich shop near Bondi Junction. In summer you'll find them on the beach - but at night they turn into hackers and hackeresses.

Well, don't you want to do it in style? Don't put up with that insipid beige surround your wonder machine is buried in now. For you too can have one of the amazing new cases that have been released from Micro Accessories for a mere \$39.00.

It allows your old 64 circuit board to slot straight into the blank screw slots, giving your keyboard a new lower elevation - far more conducive to fast typing and sleek performance especially through the bends.

The new road-hugging lines of this dramatic facelift are what could herald the rebirth of the C64 as a trendy computer that would be equally at home on Elton Johns' piano as it would be on Malcolm Frazer's farm.

Soon to be offered in a range of amazing colours, it is bound to be a big seller over the holiday period. Buy one today ... be the first in your street.

Commodore New Appointments

Commodore Computers has announced the appointment of Mr Craig Tegel as the company's new National Education Manager.

Mr Tegel rejoins Commodore's sales team after a two and a half years absence during which he managed his own computer business specialising in school education of computer programming.

Commodore Australian managing director Mr Tony Serra said Mr Tegel's appointment will greatly strengthen the company's educational sales operations.

If you like computer games, take a look at
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Sound Expander

turn your Commodore into a real musical instrument!

by Phil Campbell

Let's face it, folks - some of the gadgets we buy to stick in the empty slots in the back of our computers are just plain toys. When we buy them, we are told how useful they will be, how we really can't do without them - and we half believe it. But deep down, we know they are just toys. They will be fun for a while, and then they will be stuck in the high-tech toolbox to be played with on a rainy day.

The Commodore Sound Expander System is NOT a toy.

For a time, everybody raved about the Commodore SID chip. It did good tricks, and everyone said that the C64 was ALMOST as good as a proper music synthesizer. Almost. But not quite.

The Sound Expander consists of an FM SOUND MODULE cartridge, software on cassette or disk, and an optional (but I think essential) full sized 'piano-style' keyboard. Kiss "almost" goodbye. You now have the makings of a professional synthesizer, with absolutely amazing sound quality. You know me - I get cynical about what people write on boxes. But this time the box-writer is not exaggerating when he offers "a New Musical Experience on your computer ... with previously unheard of sound quality and versatility."

What's the secret of this "New Musical Experience"? Simply that the poor old SID chip has been abandoned in favour of a whole new sound synthesis system built into the FM sound module. The Yamaha 3526 chip, used in a number of fully fledged synthesizers, forms the heart of the system. So, let's have a closer look.

HARDWARE

The FM Sound Expander cartridge is large and grey. The normal cartridge size connector swells out into a wedge shaped casing of around 5cm by 10cm. A raised section at the front with a spring loaded trapdoor allows the connection of other cartridges, which are inserted vertically. Thus, once you plug in the Sound Expander, it can stay there forever without tying up your cartridge port. Perhaps, as a further benefit, software for the system might be provided on cartridge rather than disk and cassette. This would be a great advantage in a performing situation.

On the left side of the cartridge is the keyboard socket, rectangular in shape,

*"...absolutely
amazing
sound
quality..."*



with 16 pins. On the other side is the standard 'phono' type socket for audio output. The circuit board inside the casing is well laid out, with 6 chips and a bunch of resistors and capacitors supporting the main YM3526 IC.

Although the Sound Expander can be played via your computer keyboard, or with an overlay such as the "Incredible Musical Keyboard" or its Commodore equivalent, the optional full sized piano style keyboard is essential if you want to get the most out of the system.

The five octave keyboard is really just that - a set of piano-like keys in a dark grey plastic casing. The unit is solidly made, and sits on four small plastic feet taking up much of the width of a typical desk. A ribbon cable protruding from the back of the keyboard connects the unit to the sound expander cartridge, and like most ribbon cables, it always seemed to be in the way.

The feel of the keyboard was much the same as that of any inexpensive synthesizer or electronic organ. In other words, it is not "touch sensitive" like the more sophisticated and expensive electronic instruments. (Touch sensitive is musical jargon meaning "if you press harder it plays louder"). However, the feel of the keyboard is fine once you allow time for familiarisation. As soon as you plug it into the Sound Expander Cartridge, you are aware that you are sitting in front of a musical instrument rather than a computer that makes noises.

SOFTWARE

Software on both disk and cassette accompanies the sound expander cartridge. The program takes a massive two and a bit minutes to load from disk, which seems almost unjustifiable in this day and age. What can I say about the software without sounding too rude?

Firstly, the program is very well presented, and what it does, it does well. There are even "windows", which no self respecting menu can do without. A musical stave appears in the centre of the screen, which instantly displays each note or chord as it is played. I was immediately impressed by this, although on reflection I wondered what use it would be to anyone but a beginner. After all, I already knew what notes I had played. Then the light gradually dawned - this was a program designed for beginners.

A "no-frills" program, to get the system up and running without giving too much away - and to whet the appetite for the more advanced and useful programs that will no doubt be forthcoming. That being said, it's still disappointing to be left with a program that is a bit of a lame duck. Before we get too negative, let's look at what the program CAN do.

Once the program has loaded, you are presented with both the stave mentioned earlier, and a "pull-down menu bar" along the top of the screen. All menu operations are carried out with the function keys. F1 and F3 move the cursor through the menu, and F7 selects options.

The SETUP option on the menu bar pulls down a selection of keyboard and display configurations. For example, you can select the "one finger chord" function, and then determine the point on the keyboard at which the division between chord and melody keys occurs. Screen colours can be changed, and the "transposer" option allows the system to be tuned to another instrument.

Moving to the SYNTH menu, a range of voices can be selected. When the "Split Keyboard" option has been selected from the previous menu, different voices can be selected for the top and bottom sections of the keyboard. The selection of instrument sounds includes the usual Guitar, Vibraphone, Brass and Strings, along with a number of unusual synth sounds. A total of 24 voices are available, a second set of 12 being loaded from the disk.

*"... a range
of voices
can be
selected..."*



The quality of some of the voices in particular is just remarkable. The "Strings" sound, for example, is full of the timbre and resonance of a cello when played in the middle ranges. Listening back to a recording I made with this voice, I was really quite amazed. I don't mean to imply that the other voices are not good - they are. But all the same, the realism of some just seemed to stand out from the crowd.

The RHYTHM menu provides a range of preset drum patterns, as well as full accompaniment sequences if the "one finger chord" option was earlier selected. All the usual "Bossanova", "Disco" and "Waltz" rhythms are available. The RIFF menu allows a selection of demonstration tunes to be played, which you can accompany on the keyboard.

These demonstrations are just great, but seem to extend the keyboard's abilities far beyond the capacities of the provided software. This makes me suspicious. Anyway, if there are any dealers reading this, set up the system in your shop and start playing the demo tunes. You will soon draw a crowd. The DISK menu allows the loading of the second set of voices, and also provides a selection of tunes for the RIFF option. The tune must be selected on the DISK menu and loaded before it can be played on the RIFF menu.

To this point I have had nothing but praise for what this system can do. But have you wondered at all what part your computer plays in all this? The cartridge makes the nice noises, and the keyboard activates them. All your computer seems to do is display a fairly useless picture of the notes, allow the selection of options through a very clumsy and time consuming process of moving up and down and across and back a set of pretty looking menus, and allow 12 new voices to be loaded from the disk.

Can you store tunes you have played? No. Can you adjust voice parameters and create new sounds? No. Can you modify the demonstration tunes? Of course not. Can you do anything that a similar Casio-tone keyboard cannot do? Very little. At this stage, it seems that the massive possibilities of combining a computer and a musical instrument have not really been fully exploited. Rather than produce software which draws on the best features of both, the computer is merely an "inactive host", transformed into quite a good musical instrument.

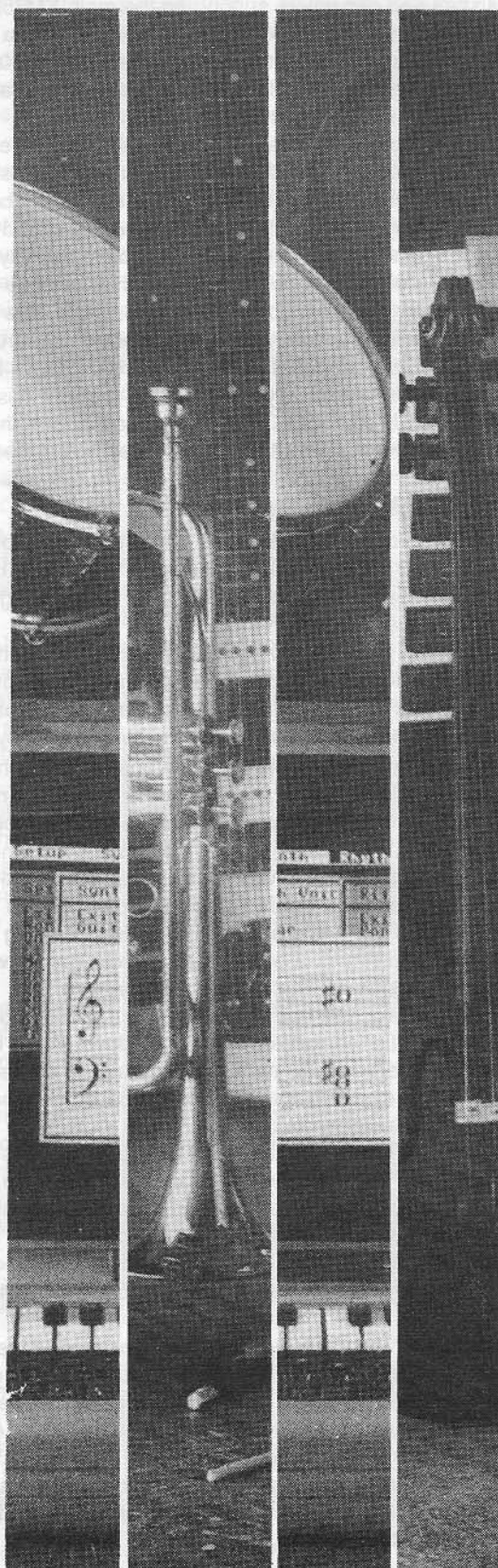
Only when the full power of the computer is harnessed - in fact even the very basic features of MEMORY and PROGRAMMABILITY - will the true potential of products like this be realised.

CONCLUSION

The COMMODORE SOUND EXPANDER is a great product, with heaps of potential. It will certainly provide hours of satisfaction, and together with the full sized piano keyboard turns your computer into a respectable musical instrument.

However, the two way exchange between computer power and music power has not been fully exploited by the software that is provided with the system. I have no doubt that "Advanced" software is in the pipeline to provide many of the features which I have mentioned. Although this is a fair and justifiable marketing strategy, I for one remain a little disappointed that more useful and advanced features were not included with the basic system software.

Distributed by: Commodore Business Machines
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Incorporates Centronics printer software (user port) with CBM graphics capability (requires user port centronics cable).

A RESET switch is fitted (we have found this to be "unstoppable", it even preserves the tape buffer).

NO MEMORY IS USED by this cartridge, it is totally "transparent" and uses special switching techniques.

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"Freeze Frame MKII" must have been the world's most powerful and most successful backup product. The success of "Freeze Frame" convinced, is the most advanced and easy to use backup product in the entire world.

Now the "MKIII" version has moved "Freeze Frame" well ahead of the resident program available for testing up to 1st July 1986 it will now transfer from tape to disc the vast majority of programs that load subsequent parts.

FEATURES

- TAPE TO DISC
- DISC TO DISC
- COMPLETELY SELF CONTAINED, NO EXTRA SOFTWARE NEEDED
- FILES COMPRESSED FOR ECONOMY OF STORAGE SPACE
- 128/128D COMPATIBLE IN '64' MODE
- RELOAD INDEPENDENT OF THE CARTRIDGE
- NOW HANDLES PROGRAMS THAT LOAD EXTRA PARTS
- PROGRAMS RESTART FROM THE POINT BUTTON IS PRESSED

OPERATING "FREEZE FRAME"

"Freeze Frame" is simplicity itself to use. It is cartridge based so is simply plugged into the cartridge port. When the computer is switched on a message is displayed, pressing "RETURN" will clear the computer back to the normal start up screen. Software can now be loaded from tape or disc completely as normal. The latest version of "Freeze Frame" will, to the best of our knowledge, allow ANY software to load and run normally (unlike competitive products).

"Freeze Frame" can be brought into operation at any convenient point by pressing the button on it. You can then do one of three things --

1. Pressing "D" will save a working version of the program in memory to a formatted disc. This version will include an auto booting very high speed reload (many programs reload in less than 30 secs).
2. Pressing "S" will save to disc with a standard reload speed that can be used by non 1541/70/71 drives U.S. spec. machines, etc., but perhaps more importantly by most fast load cartridges and systems. Use "Dolphin DOS" to reload anything in less than 10 secs. (Also suitable for U.S. spec. machines.)
3. Pressing "T" will save a working version of the program in memory to tape. This incorporates a high speed reload at approx. 2400 baud.

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SERIOUS WARNING: THIS IS AN EXTREMELY POWERFUL PRODUCT AND IS STRICTLY FOR PERSONAL USE. DON'T COMPARE IT WITH ANY OTHER PRODUCT, NOTHING ELSE OFFERS THE POWER OF "FREEZE FRAME".

DOLPHIN DOS THE DIFFERENCE IS STAGGERING

Like everyone that has had the pleasure of seeing this system in operation you will be amazed by both the speed and ease of use. It is compatible with the majority of commercial software, speeding up both the program loading and SEQ/REL files. Fitting requires the insertion of two sub assembly boards, one in the 1541 and one in the '64/128. This does not normally entail soldering, although a small amount will be necessary with some machines.

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If you require further information please send SAE for fact sheet.

Operates with the CBM 64 or 128 in '64' mode with 1541 disc drive.

THE FEATURES

- 25x FASTER LOADING (PROGRAM FILES)
- 12x FASTER SAVING (PROGRAM FILES)
- 10x FASTER LOADING (SEQUENTIAL FILES)
- 8x FASTER SAVING (SEQUENTIAL FILES)
- 3x FASTER LOAD AND SAVE (RELATIVE)
- (These figures do not allow for searching)
- Easy DOS commands from function keys.
- Fast formats 40 tracks giving 749 blocks free.
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- Machine code monitor.
- Can be switched out if necessary.

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Commodore Sound Sampler

- The poor man's Fairlight

by Phil Campbell

The Fairlight CMI is one of Australia's most famous musical exports. Probably the first fully digital synthesiser, the Fairlight could simulate any sound, from a full symphony orchestra to the barking of a dog. Once a digital sample of the sound was obtained, it could be manipulated and replayed at any pitch.

I can well remember the reaction of crowds of onlookers when the Fairlight was displayed at the 1979 Sydney Musical Instrument Expo - choruses of barking dogs, sounds of breaking glass, and the strains of heavenly choirs all poured forth from the Fairlight keyboard. Everybody wanted one, but few could afford to even look at the price tag.

Times change, and now the Commodore Sound Sampler can perform many of the same tricks for a fraction of the price.

The sound sampler cartridge, with the microphone provided, allows you to take three second "sound snapshots", which can then be replayed at any pitch on your computer keyboard. The waveform can be plotted on screen, an interesting and informative feature, and the sound can be edited to some extent.

The unit can also be used as a digital "echo chamber" with variable delay time, and as a "harmoniser", or pitch converter. The "Quattro Sampler" feature allows four sounds to be recorded and replayed in sequences to produce interesting rhythm effects. To top it all off, the unit doubles as a drum machine, using predigitised drum sounds included with the program.

HARDWARE

At first glance, the Sound Sampler cartridge looks very much like the FM Sound Expander - large and grey, with a trapdoor on top for the insertion of other cartridges. The most obvious differences are the addition of two small knobs, marked volume and feedback, and the sad, sad absence of the Piano Keyboard port.

This time, the right hand side of the cartridge features phono sockets for both input (microphone or line) and output. Inside are eight chips, lots of capacitors, and a few resistors. The circuit board is marked "Issue 3", which probably means that most hardware bugs have been ironed out by now. Like the Sound Expander, the cartridge and board are well constructed, and can be easily serviced.

The microphone provided with the unit was somehow lost at the editor's office, so I can't really comment on it, other than to say that the picture on the box looks just like a typical cassette recorder mike. I hooked up another microphone that I had lying around, and it worked with no problems.

By the way, the picture on the box shows two people having lots of fun with the Sound Sampler System, surrounded by lots of musical instruments. There is also a record - you remember, one of those round black things - lying on the table. I think they are saying that records are now obsolete, because they won't be using this one again. Not only is it out of the dust jacket, but lying on top of it are a tambourine, a tuning fork, a set of maracas, and the corner of a Synthesizer keyboard. Making your own music is so much fun that you won't have time to listen to records anyway.

*"...many of
the same
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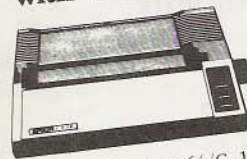


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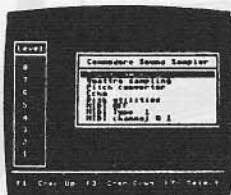
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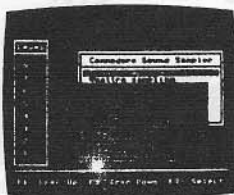
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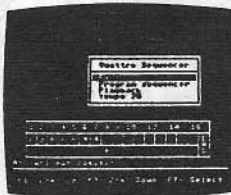
MUSIC



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SOFTWARE

This is another special Snailo-Loader from Commodore, so be patient. The software is "command compatible" with the Sound Expander system, which means that F1, F3 and F7 do all the work. Windows and pull down menus are again the flavour of the day, and are again v-e-r-y frustrating, for you have to climb up and down two or three menus every time you wish to change a simple setting. However, the software is fairly self explanatory, and all the features can be accessed with very little need to refer to the manual.

The system is MIDI compatible, which means that a MIDI interface can be plugged into the top cartridge port allowing the Sampler to be controlled by a MIDI equipped synthesizer. This is most unfair if you have just bought the Commodore Piano-style keyboard and expect to be able to use it with the Sampler as well as the Sound Expander. You can't. However, if you already have a Midi style synthesizer, this feature is a real boon.

CONCLUSION

This system works well, and is easy to get going. Besides that, it's lots of fun.

Being limited to playing back sounds on the old 'QWERTY' does put a bit of a damper on my enthusiasm, because there's no way that you could ever really use the system in a performance without a proper keyboard.

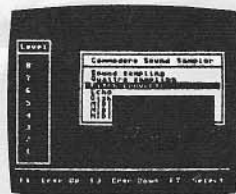
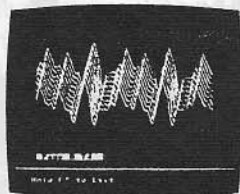
However, professional MIDI equipped musicians should take a good look at this system as an inexpensive means of getting into the world of digitised sound. The Echo, Pitch Conversion and Drum Machine features are handy, and could be used in place of stand alone units which each cost more than the Sound Sampler system.

All in all, the Commodore Sound Sampler is interesting, educational, potentially useful, and lots of fun to play with.

Distributed by: Commodore Business Machines

Available December

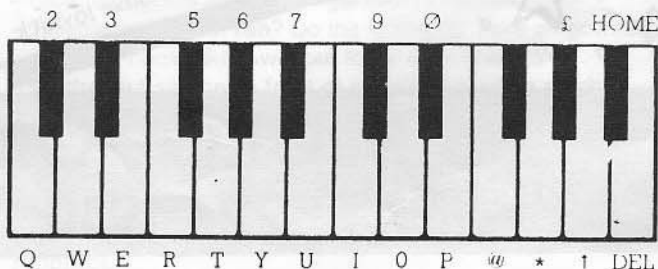
Price: Not yet available



"...works well, and is easy to get going..."

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T	=	G
6	=	G#
Y	=	A
7	=	A#
U	=	B
I	=	B#
9	=	C
O	=	C#
P	=	D
@	=	D#
*	=	E
-	=	F
+	=	F#
£	=	G
↑	=	G#
HOME	=	A
DEL	=	A#
	=	B



put pen to screen with flexidraw *By Daniel and Andrew Farrell*

Flexidraw is a drawing base on which you can design all sorts of things - anything varying from rough sketches to highly detailed masterpieces - and have them printed out. We put it through its paces to file this report.

What's different about this program is that user input is provided by means of a light pen. Unfortunately while using the software I noticed that 'shooting' sometimes occurs. This is a problem inherent with light pens as a rule, although especially worse if your screen is dusty, which causes static.

The package actually consists of a suite of software, with the primary drawing program being the focal point of all the related accessories. Let's deal with each of these separately.

THE MAIN EVENT

Self titled, the main drawing board, *Flexidraw 5.0*, is the most powerful of the included programs. A variety of draw modes allow you to spray, or draw in any of three pen widths.

Another option is fill, where you may paint areas of a design. No doubt this would be far more interesting if the colour facilities of the 64 were fully supported. In all there are 18 different fill patterns - Macintosh style.

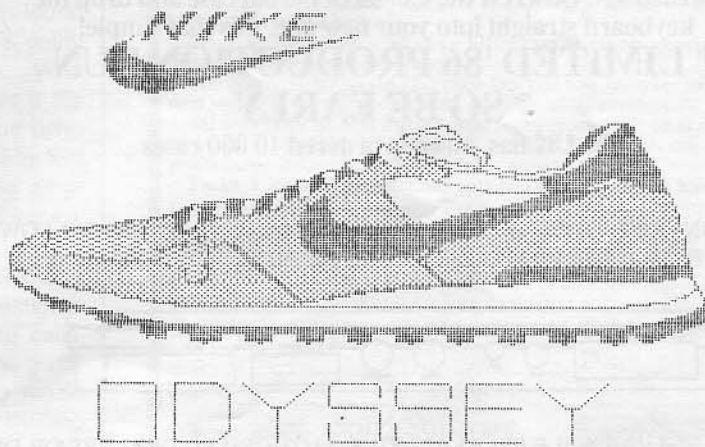
Partly due to the limitation that a light pen would place on the software, the package only operates in grey scale. Some colour may be added using one of the ancillary programs, however this is a cumbersome process that is best left for the diehard enthusiasts.

When drawing pictures you're given two pages or screens to work on. If you want you can have both pictures displayed simultaneously using a novel split screen technique.

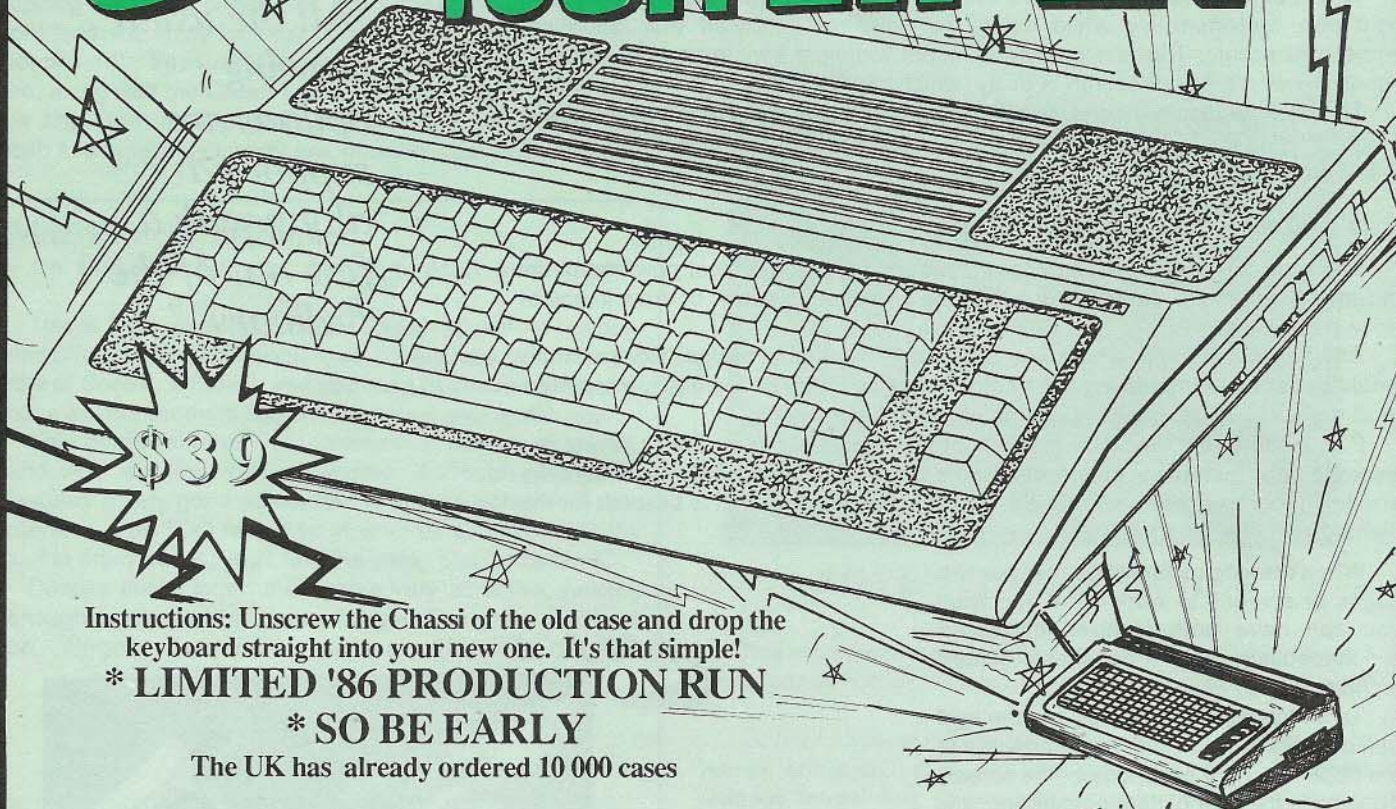
To switch pages you simply run the light pen over the word PAGE which appears at the upper top right hand side of the screen. To access the split picture capabilities, you must press 'f7', and then use the cursor keys to select the split axis. Disk housekeeping and various other functions are also located on the function keys.

All the usual drawing options are supported along with a few out of the ordinary. Circle functions also include arcs and ellipses. There's 'box', 'straight lines' and a special filtered mode to help smooth out the usual bumpy freehand light pen doodles.

"All the usual drawing options are supported along with a few out of the ordinary."



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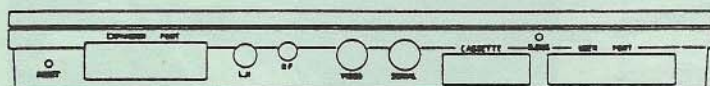
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SOFTWARE REVIEW

I was especially impressed with the large array of fonts available for use in the lettering mode. These include Gothic, Roman, Times, Art Decor and many more. Others are apparently available, with an additional package that also lets you design your own custom fonts.

Text may be enlarged, and the editing functions are all very straightforward to operate.

Printing pictures gives you the option to enlarge by a factor of four, or standard size prints. A vast range of printers are supported by means of a printer driver which is chosen at initial loading time.

To abort print you press run/stop and you must reset the printer and interface before attempting another printout - simply turn the offending items off and on.

The run/stop key also serves as an oops feature for stopping those nasty fills that take place outside of the confined area you intended.

I found page 60 of the manual particularly helpful as it contains a selection of tricks, tips and shortcuts as well as a free big mac voucher - only valid for purchases over \$300. But seriously folks, the documentation was beyond compare. Every aspect is covered in depth and suitably indexed for easy cross referencing.

Flexidraw is not your average graphics package. Its lightpen operated features are simple and easy to use in a well presented format. However, the price you pay is the lack of colour implementation - rather disappointing as I had just bought a new colour TV.

AND THERE WAS COLOUR

Almost a colour Paint Package, *Pen Palette* brought my new TV to life. It's a half hearted attempt at giving the old b/w silent pictures a shiny new colour face lift.

Several colour and even more b/w pictures are provided on the reverse side of the disk for experimentation. I tried colouring the 'brain' to a fleshy red with grey patches. The result whilst effective was somewhat chunky.

The basic limitation applied is that you can only have two colours per 8 x 8 pixel block.

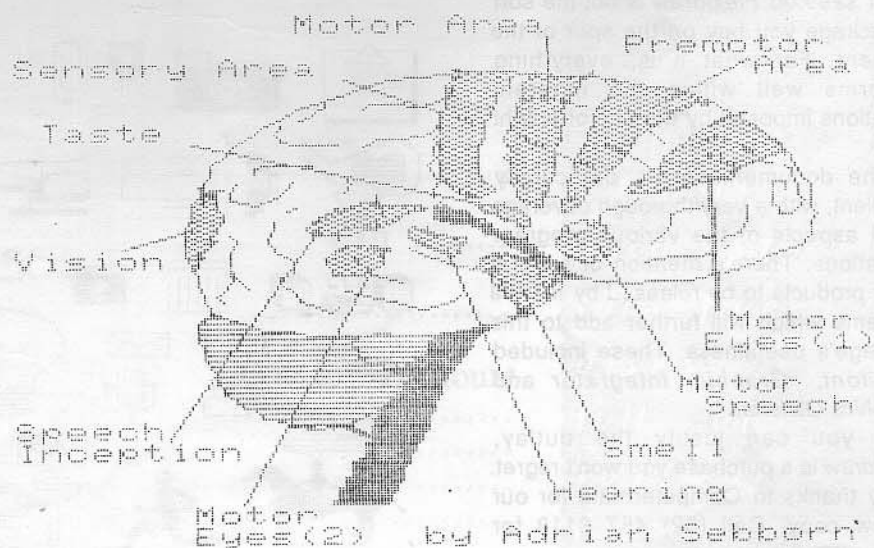
Both the *Koala Pad* and *Blazing Paddles* allow twice that - by accessing the multi-colour graphics mode rather than the bland, limited arena of hi-res mode.

Nice try, guys, but it ain't the big time. still, the colour you do get is better than none at all. The manner in which your palette is chosen and the picture painted is about as simple as would be possible.

TRANSGRAPH

This program can only be used if you have a modem. Pictures may be transmitted to other users who have *Flexidraw* - a pleasant addition if you're into that sort of thing.

Only 300 baud is supported. However, to save time and face over the usual seven and one half minutes to send a picture, it is possible to pre-pack your file - rather like standing on the grocery bag so you can fit more in. In this way sending time can be substantially reduced depending on the nature of your picture - the less complex the better.



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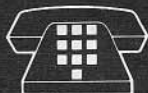
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Parallax

by J Mark Hunter

A shopping center in Tulsa, Oklahoma.
Grocery store, aisle 12.

Toiletries, deodorant, shampoo and soap. The man's hand that reaches for the Brut 33 is shaking slightly - nerves, lots of tension. Tomorrow he flies for the moon, and then beyond. He takes two cans.

He's walking along now searching the shelves for a bottle of Listerine. He can command the Ibis spacecraft but his grocery cart collides head on into a Lady Scott toilet paper display. The high wall of plastic wrapped rolls tumble crazily to the floor and one ricochets off his arm and hits a small girl in the face where she sits facing her mother in another cart. She immediately breaks into tears, screams hysterically.

The mother becomes quite concerned, a red spot appears where the toilet roll bounced off her child's face. She fears concussion, possible whiplash, inevitable brain damage and she begins screaming too, for store managers, police, Interpol, the Lone Ranger, the six o'clock news.

The man is upset and confused. He tries apologies but the mother brandishes a can of mace. Tulsa. Half a can.

Before he knows what is happening he finds himself suddenly being shoved backwards and crumples into a grocery cart at his side. Now at high speed he is being rushed through the checkouts for the automatic doors and the parking lot outside. It's hot outside, late summer, October, 1986. He tries looking up but from his distorted angle he can only see a shoulder bag jangling from the lady's arm. Yes, a lady.

Then he comes to a sudden stop in front of an Oldsmobile Vista Cruiser station wagon with Pennsylvania license plates and a bumper sticker advertising the possibility of a future millionaire aboard. The shopping cart is thrown forward and he is catapulted out of its wire basket and into the rear of the station wagon. Seconds later the woman is in the front seat and the car is tearing away from the parking lot with as great a percentage of accuracy and speed as their frenzied decamp from the store.

It is not until several minutes later that the man dares venture his eyes to the front of the car and gaze at the woman behind the wheel. From this angle he notes her chestnut brown hair, and a summer dress of nice blue shades and other things. She's heading for the highway, 110 miles an hour, and all he did was hit a little girl in the face with a runaway roll of Lady Scott, floral pattern, 600 sheets.

He swallowed, and summoned the nerve to speak. "Excuse me?"

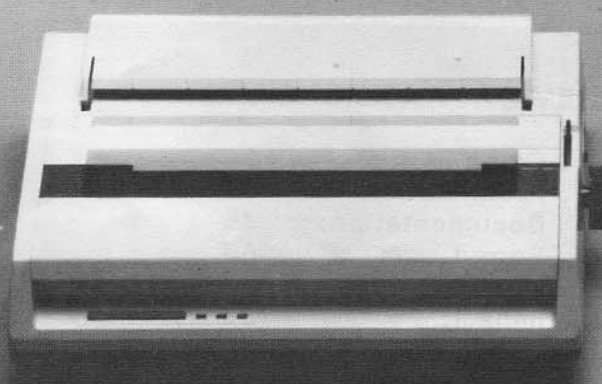
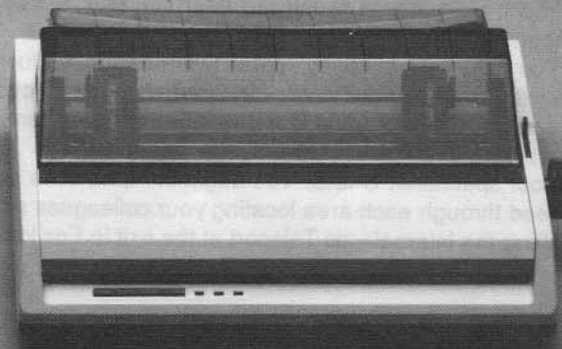
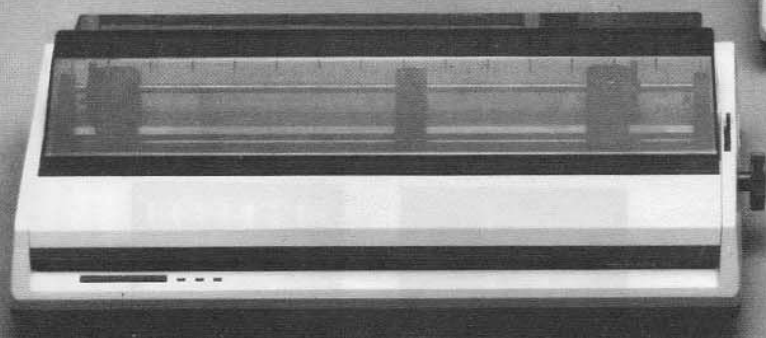
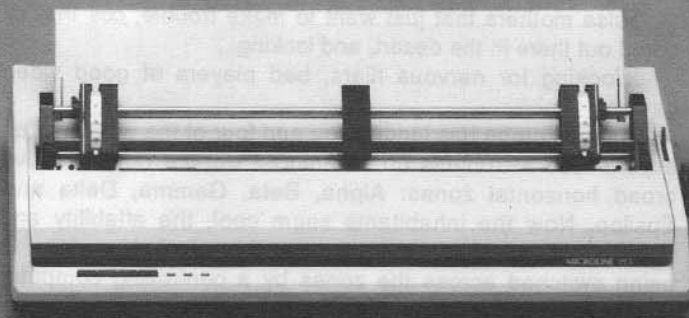
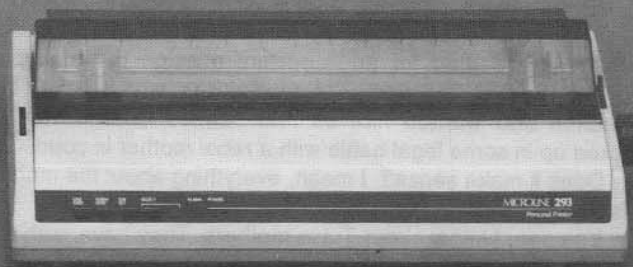
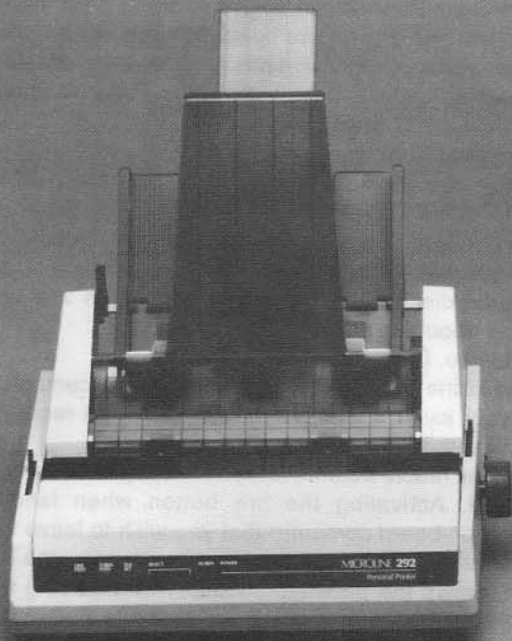
He watched the rear vision mirror for her eyes to lift and stare back at him but they never did, they just continued gazing ahead, following the road out to the Will Rodgers turnpike, 87 degrees.

'Listen. You mind telling me what's going on?'

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Suddenly, she stopped the car, the abruptness throwing him forward to the rear seat, and as he kissed the floor mat behind the driver's seat he heard her open her door, then, open his.

'Okay, spaceman, you can get out now. It's safe.'

Totally bewildered, he hauled himself from the floor and grunted his way through the door...

(I'll stop there ...I mean, what is going to happen, right?)

Well, as it turned out, spaceman was one of five specialized astronauts readied for an important mission to some place north of the sun. The woman, a good citizen, who believed in his vocation and wanted him on that spaceship tomorrow, not locked up in some legal battle with a rebel mother in court.

Does it make sense? I mean, everything about the man and his tour?

You see, I know about Tulsa mothers. They have nothing to do with this game, but it's something I really feel my readers should know about, okay. Think of it as a community service. You'll thank me next time you're there.

Tulsa mothers that just want to make trouble, cos they're bored out there in the desert, and looking...

...looking for nervous fliers, bad players of good video games.

A space probe has landed you and four of the world's most experienced astronauts on an artificial world divided into five broad horizontal zones: Alpha, Beta, Gamma, Delta and Epsilon. Now the inhabitants seem cool, the affability and hospitality flows. Then you discover this. Vital information is being switched across the zones by a controlling computer intelligence, information revealing an imminent attack upon Earth!

Tulsa momma, she worked for them. I'm glad we didn't trust her. And the little girl that got hit - yeah, well, don't worry about too much pain, it was found out later she was a 40-year-old computer engineer for the five broad horizontal zones.

You can't trust anyone! So don't worry about it. Just get on your way and do your stuff, Mr Superspaceman, out to the beyond and contact your four allies in the other zones in an attempt to break free and destroy the computer.

Your spacecraft is IBIS. You begin in Alpha zone and must proceed through each area locating your colleagues and finally reaching the Intergalactic Teleport at the exit in Epsilon zone.

You'll arrive at the teleport about 4:00 in the afternoon. This is much quieter than at other times of day, and proceed to the far west end of the terminal. Approach the lady behind the Hertz rent-an-Ibis counter and hand her the keys. She'll smile and say, "Thank you, everything seems to be in order here. Fat dinosaurs eat high-calorie pterodactyls." This will be your message to know that your mission has gone well and possibly provide you with a little information about the Tulsa situation. You answer, "And lots of them."

It'll come to you. Don't worry.

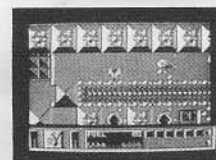
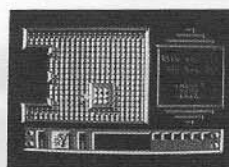
The controls are manipulated by a joystick for in-flight movements to either dive, climb or turn in a clockwise or anticlockwise direction. Keyboard control is used for raising or lowering of landing gear, turning your protective shields on or off, shoot lasers, display datacards and passwords and ask the stewardess about lunch.

It'll come to you. Don't get out of your seat.

In addition to the controls there is an on-board computer, activated by your joystick to move the cursor over a required option and pressing fire to select.

The computer reacts automatically in response to certain signals as well. Activating the fire button when landed indicates to the on-board computer that you wish to leave the ship. You'll be asked what you want to take with you - the left hand column shows the potential inventory and guiding the cursor over this will transfer your selection to the right hand column for exit. Underneath are three main options: a) standard kit, supply of oxygen, stun gun and ammunition; b) stay aboard; c) exit craft.

Note that the gun enables you to stun with one shot an alien scientist, or eliminate a robot with one shot. Two shots...I don't want to even think about it.



AUSTRALIAN COMMODORE REVIEW RATING CARD

Game: Parallax
Machine: Commodore
Distributor: OziSoft
Publisher: Ocean
Price: Disk \$39.95
Cassette: \$39.95

Graphics: 94
Presentation: 87
Documentation: 76
Sound: 80
Music: 69
Impact: 86
Overall: 89

LET'S PLAY!

It's really at this time that the graphics get really good, and display on the screen a magnificent effort at spectacular presentation. Here you have to enter a hangar and this is strategically difficult. It takes a long time to master. Get it wrong and you blow you and your Ibis up.

Hangars are important areas because they are the principal areas for locating computer data vital to the mission's success. Scientists are often there, as well as pesty robots who must be zapped on sight!

Then to the big one, the CIU (Central Intelligence Unit) - the main alien control mechanism planning the invasion of Earth. To extract information from these computers you must obtain one datacard from each grade of scientist in each horizontal zone.

When you insert the relevant card, the computer gives you the letter of the password to enable you to progress to the next level. The letter it gives corresponds to the grading of the card (and the scientist it's obtained from), ie if a third grade card is inserted then you will be given the third letter of the password. The card is automatically returned to you and used for other things on other computer banks.

You progress to each level and get necessary cards and information, then ultimately carry on to the CIU. Then head for the hills and the Epsilon exit.

And one other thing, watch out for black holes. These take form in pairs of square black openings with an arrow between them on the surface. Passing over a black hole, in the direction of the arrow, you will be sucked in and shot out of the adjacent one, at faster velocity. These help you to build up extra speed throughout the game, a necessity on other levels later as speed will be crucial to fly through traps. Passing through against the arrow means your speed will be cut in half. Quite fascinating, actually.

The colour is vivid, tending toward a major proportion of it being green and purple, but this is fine. We want to keep the interiors of these horizontal zones a professional work-conducive atmosphere, right?

Sound is as strategic as the game, and well presented, manifest by a first-rate musical score. Graphics are exceptionally good, and the overall playability of it is tremendous.

Parallax, Ocean Software. A tidal blitz of magical proportions, and noting that the Tulsa woman has nothing to do with the game, and we'll never find out why her car had Pennsylvania license plates, but then, did anybody ever ask The Lone Ranger where Silver was registered when he helped out a friend?

Okay. Then just get on with the rest of the magazine.

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The SEVEN CITIES of GOLD

by Adam Rigby

Set sail, me hearties, we're off to find a new land.

If you've ever dreamed of being a ruthless pirate and digging for buried treasure, blowing away the goodies, having a parrot mess on your shoulder and making general chaos upon the ocean, you'll have to play some other game. You could however trade your old nagging pirate in for an intrepid young Spanish explorer. Anyway, load up *Seven Cities of Gold* and journey back to the age of discoveries.

Now at long last you have been granted the resources necessary to mount an expedition. The location - a land you suspect to exist west of the Canaries. So off we go, but first you must equip yourself.

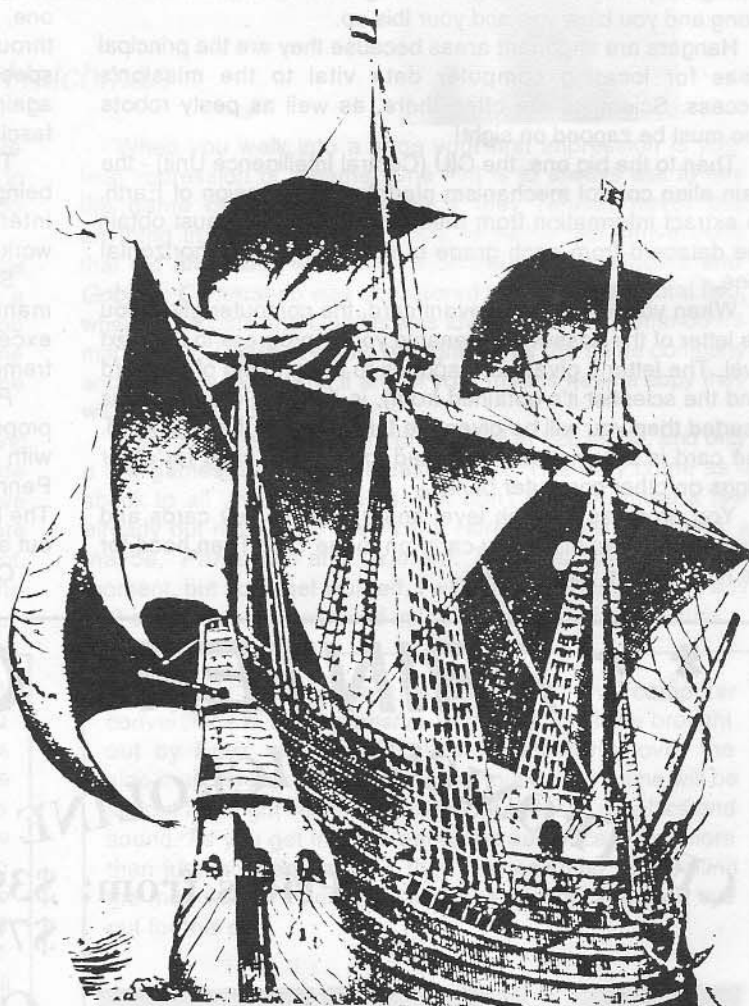
Whilst you are in Europe you are presented with a scrolling picture of various places important to your mission. These places include:

The Court - here you must return for recognition of your accomplishments, for the glory and power of titles and more importantly money.

Your Home - this is where you keep your records and maps - a perfect opportunity to gloat over your success or on the other hand pity your pathetic attempts (the second of the two happens quite frequently until you know what you are doing).

The Outfitters - it is here that you will spend your hard-earned gold to equip your ships with necessary provisions for the expeditions. As your experience grows you will learn to choose effectively the best way to invest your wealth, and successfully complete your mission.

Now that we're all organised, let's go. When you leave the safety of your home port you are surrounded by the vast oceans, west lies your destination. The best way to get there is to point yourself west and sail;



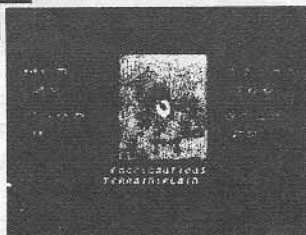
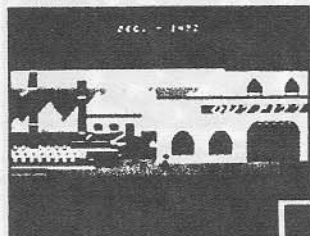
with a bit of luck you won't get caught in a tremendous storm and blown off course. If the ocean gods grant your wishes you'll get to see land again.

Ta-taa! You discovered a new land! Excitement fills your veins, building anticipation almost explodes as you ache to find its secrets.

The first thing you are confronted with is a map with graphics representing areas of mountains, forests, swamps, plains and rivers. Also the native civilizations are shown, their symbols show their size and development level. Should you decide to leave the safety of your ship (the whole expedition would be pretty pointless if you didn't) you will be able to interact with the natives - they are the key to your success.

There are a few ways to go about making contact with the natives; the safest but most longwinded process is the organisation of trading with them. They want goods (which you were hopefully foresighted enough to bring from Spain) and will give food and/or gold in trade.

I tried to establish trade and found it far too slow, so I decided to go into conquer mode. This is far simpler and a lot quicker. All you do is enter the village, pretend you're a tribe to tribe salesman with the latest look in designer spear-throwers, mosey on over to the chief and paff,



biffo, smash. After battling on with the tribe for quite a while they admit defeat (if you don't flee or get captured) and give you anything you want - this is basically limited to what you (and the bearers they give you) can carry.

While conquering villages is quick and profitable, they have long memories and don't take kindly to you taking all their gold and food (reasonably enough, would you?), so in retaliation they set up ambushes and they like to take their vengeance. This can get rather nasty at times, especially when you are running out of food, dying of malaria and your shoes need new soles.

A tell-tale sign, to help you decide whether total obliteration or crafty swindles on the trading front are necessary, is the mood of the natives. As you enter a village, a pulsating drum-beat echoes in the background. The speed of this drum-beat indicates the present feelings towards your party - a fast, heavy drumbeat is NOT a good sign if all you want to do is have a leisurely meal with the chief, you'll probably be the main course. No really, the natives aren't that mean - as soon as things warm up and you don't think you can cut it, get out of there, and you should be okay.

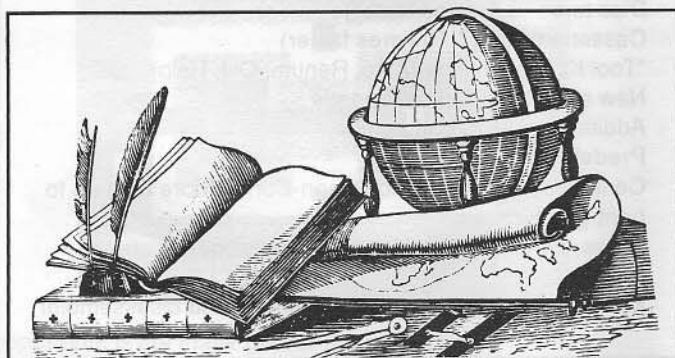
Since the main objectives are to explore, interact with the natives and bring back riches, you can't expect to be favoured by the court unless you do all of the above. So the best thing to do is to find a system that works best for you and stick to it, this way you can discover the land quickly and conquer efficiently - maybe not as mysterious and exciting as wandering willy-nilly but it works.

Nice touches are the subtle realism and intelligence of the game. If you have some native bearers with you, they can (if they feel inclined) tell you where some gold mines are located or perhaps the direction of the capital city. Sometimes they lie!

The intelligence of the game is displayed by the use of communication between villages - if you have just marauded one city don't expect the next one to greet you with open arms.

A real bonus arises if you conquer the capital, the message on the screen reads "The Incan Empire is yours, you may take what you like as tribute". Well, soon you realise they weren't joking - most of the cities you arrive at after this glamorous victory give you anything you want, or rebelliously attack you. This makes the game quite lively.

I had a ball playing this game. Although it might not appeal to everyone, it is very well presented and documented - typical of Electronic Arts. So do yourself a favour and buy *Seven Cities of Gold*, and while you're out shopping you might like to get a parrot or two and perhaps a black eye patch - if you can't play the pirate, you can certainly look the part!



AUSTRALIAN COMMODORE REVIEW RATING CARD

Game: The Seven Cities of Gold

Machine: Amiga & Commodore

Publisher: Electronic Arts

Distributor: ECP

Price: Amiga - \$79.95

Commodore - \$59.95

Graphics:	88
Presentation:	96
Documentation:	95
Playability:	90
Difficulty:	75-88 (variable)
Sound:	78
Music:	80
Lastability:	85
Overall:	91

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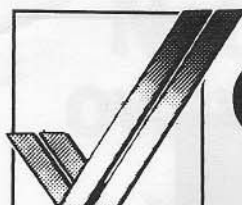
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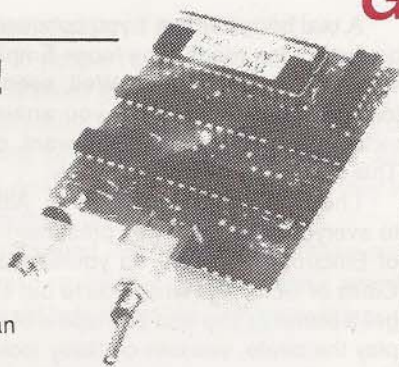
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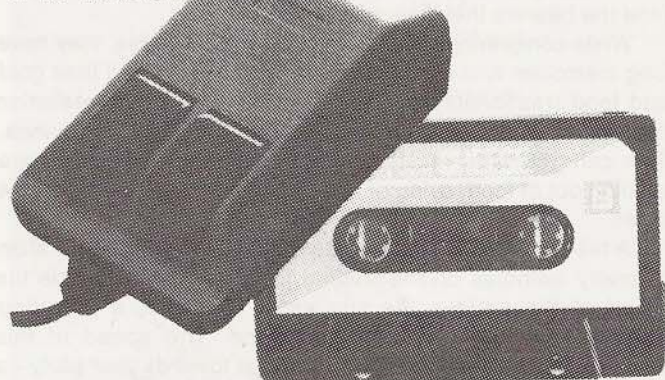
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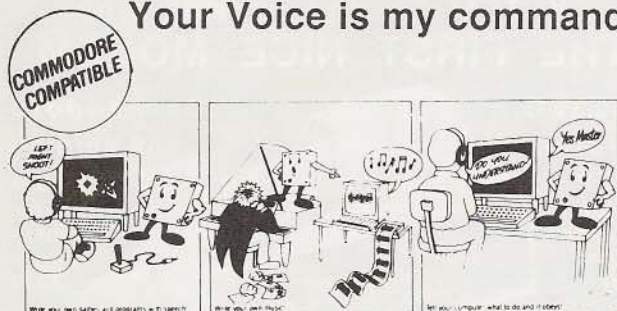


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REBEL PLANET

by J. Mark Hunter

I wonder.

If we ever got invaded by men from Mars, and they all held us hostage and started rummaging through our personal effects, I wonder what they'd think of the things we have around to amuse ourselves with - in particular these video games, and the concepts of such.

Here's one from a distributor registered as FF, or Fighting Fantasy Ltd, and man, it's really ugly.

I think the Martians would wonder why they did not attack earlier on. To save us long ago from slipping so far down into such a destabilizing and brain-soggifying sewer that we've got ourselves and our computers into.

(It's about this time that I urge you again to check out Microsoft's brilliant *Flight Simulator* or at least cruise out to your nearest library and check into a good book.)

Here's the scope.

As the might of the alien Arcadian Empire tightens its hold on our galaxy - they mean, of course, the proprietors of the video arcades psychologically abducting our people into the bowels of a suburban shopping centre basement where the machines are kept - the leaders of the secret Earth organization, SAROS, (Sardonic Amusements Requiring Offbeat Sadism) gather their slender resources into one last daring and foolhardy mission to strike at the heart of the invaders' home planet.

YOU are their last hope - no please don't be, there's a better future yet - hey, summer just started!

Equipped with a forbidden laser sword - yeah, Skywalker's got the patent on them and he's holding on to them until after the next Lucas trilogy begins - your mission is to seek out the underground resistance and piece together the vital code you need to destroy the enemy. But time is running out and only YOU stand in the way of the Arcadians' complete domination of the galaxy!

"Oh my goodness! Outta my way, Mum, I've got to save our galaxy, the Arcadians are coming! The Arcadians are coming!"

"I didn't know we were at war with Canada?"

Mothers.

Yes, preparing for your secret mission has been a long and patient task. The Search and Research of Space Organization - oh, that's what it stands for - well, it's code, ay, they've had to



change; although it seems to be just an earth-based institute, in fact it has been doing all it can to overthrow the stranglehold of the Arcadian Empire.

Imagine that, and every time I drove by there it looked so peaceful, you know.

A full scale military attack is out of the question and the only hope of success is a solo mission to destroy the Arcadian's queen computer which controls and organizes the minds of the Arcadian troops. That'd do it.

You are the perfect choice for the mission - hey, thanks, but you know, I've got to thank my mother for this too.

You are courageous, resourceful and dedicated to liberation - yes, and you thought your membership had expired! I knew it all the time.

Your cover is excellent - man, I love those threads. You will travel as a merchant to the planets Tropos, Halmurus and Arcadion, all of which form part of the Arcadian Empire. You will enjoy six nights and seven fun-filled days staying in the fabulous Halmurus Hilton and return home compliments of Tropos Air. All this, and more, can be yours - if the price is right!

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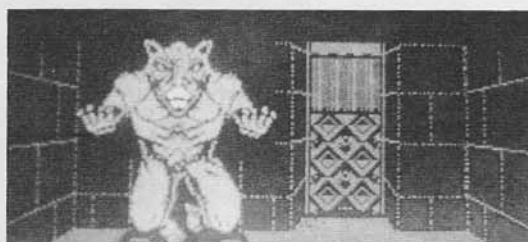
LET'S PLAY

On board the merchant ship "Caydia" you will discover many useful items for your mission - yo, mister! Tell me, what's the ox cart for? not least of which is a laser sword. And get this, the instructions warn you to deactivate the laser when not in use - remember that, Batteries don't grow on Halmuran trees, son.

SAROS has been able to send spies on a head - unfortunately you got to take a ship - they'll be gathering information before your arrival - I should hope so, I didn't send them there for the scenery. So you've got to find these contacts for new data. "What'dya get?"

"Well, I know the bar in the Halmurus Hilton closes at 2." "Anything else?"

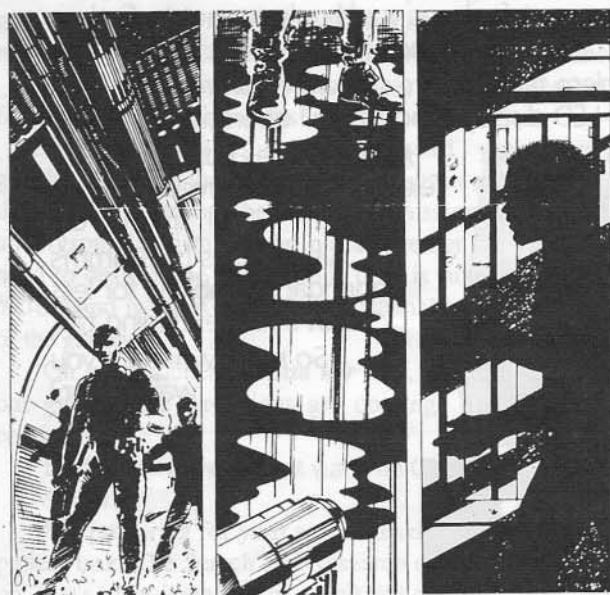
"No, I passed out at 2:01."



The building that houses the queen computer on the planet Arcadion can be entered by using a numerical code of nine binary digits, (binary digits are either 0 or 1; so 110 would be three binary digits), the underground spy networks may know something to help you discover these digits.

You must locate the rebel leaders, learn the digits, then destroy the queen computer, before it destroys you!

I have to hand it to the creator though, a little in that regard. At least he's got just a touch more creative in



having us going up against a rebel computer this time instead of mega-maggots from the bad west end of the universe.

But, overall, my very first reactions to the game as recorded here on my microcassette is: dumb. What was that? I said, dumb.

Yeah, I thought so too.

There's no standard to this game. It's a twisted jumble of rehashed programs and they just added a little more paint to the ghoulish faces of the rebel planetarian residents.

Hints On Play

The Caydia has a preprogrammed flight plan which is controlled by CAYDIA TIME or CT for short. So, not only are you fighting to accomplish a dire mission but you have the CT factor to consider as well. The Caydia could take off without you, and you would have gone on the Price is Right for nothing.

You will find that you have the means to monitor CT but you also have two special COMMANDS that could be invaluable as the game progresses: ADVANCED CT and RETARD CT.

The ship's clock can, at certain times, be adjusted to speed up or slow down the CAYDIA's countdwn sequence. Advanced CT will move time on, Retard CT will move the clock back.

WARNING; Retard CT can only be used once during your mission to dealy the ship's take-off to the next planet! This is due to the Zorton crixium configuration - yeah, I've had the same trouble with that in my Mazda.

Ensure that both personal status levels are replenished before leaving the ship. Carrying a spare HCAP is recommended, and a thermos of coffee.

Note, too, that the ARCADIANS have banned humans from carrying weapons, therefore unless you plan on





using a weapon keep it out of sight of the Officials.

Remember to TALK to people (even some ARCADIANS might listen to you) and at times give you valuable clues.

Finally, examine everything for clues or information on use etc. Brains can and will be more effective than brawn, and SAROS will be coming down heavy on you because they're knowing you're Earth's numero uno agent.

As for the graphics and sound - *Rebel Planet* is sitting way back there in the interest-arousing stakes. I really wasn't impressed at all and as I said before I could find better things to do, and did.

I'm holding out for the Martians and their attack, maybe get it on film and make a video out of that! Object: flush all these dumb games, before they flush you.

Sounds promising, but so did *Rebel Planet* when they had it on the drawing boards, like an American yacht.



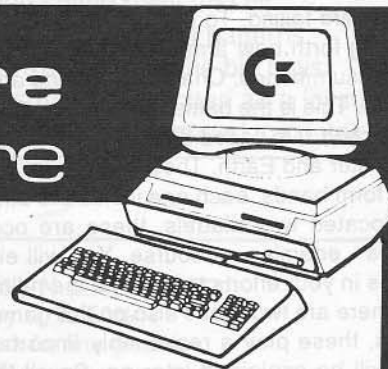
HOME COMPUTER GEM RATING CARD

Game: *Rebel Planet*
Distributor: Computermate
Price: \$54.95

Graphics:	68
Presentation:	70
Documentation:	65
Sound:	60
Music:	60
Impact:	75
Overall:	68



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ARCHON II:

ADEPT

by Adam Rigby



Do you remember the amazing chess game in *Star Wars*? You know - that game where animated monsters were jumping all over the board ripping limbs from opponents, then Chewbacca got just a bit peeved because C3PO was winning and threatened to rip him to pieces, metallic limb from limb.

This game in *Star Wars* must have inspired someone at Freefall software. Imagine a chess board viewed from the top, with wizards and monsters instead of chess pieces, and you've got *Archon* (well, sort of). *Archon II* is the same theme, that is not to say it's the same game - it's quite different.

Long, long had the Master of Order struggled with the Mistress of Chaos. Ancient as time, changeless as death was their conflict - waged in mundane realms by magically potent Adepts. No more. The old, secure wellsprings of magical energy are failing. To control the new sources, the Adepts are bringing forth new armies of reluctant Demons and Elements long unsummoned. Change is at hand and the battle would find an end. This is the battle. The ending is yours.

Archon II is based around the four classic elements - Fire, Air, Water and Earth. These elements, fire being the outermost one, form bands, each one inside the other. On the Earth band are located two citadels, these are occupied by Order and Chaos - enemies, of course. You will either take on Order or Chaos in your efforts to become the ruling force.

There are two areas also on this game board that are called Voids, these play a reasonably important part in the game - this will be explained later on. So all this, the elements, the citadels and Voids make up the tactical board.

There are six flashing power points. Two are located in the Voids squares. The other four MOVE from turn to turn through the outermost corners of each of the four elements. Occupation of the six power points, or total obliteration of the



opposition, is the major goal of the game.

In your power are four Adepts, they can do one of two things - move and attack or cast a spell. The spells are the key to the game, if you can use them effectively you will have a good chance of defeating your enemy.

The Spell List

SUMMON - This is far and away the spell you will use most often. When you select it you may choose among four Elementals and four Demons by moving the frame from monster to monster. The cost in energy goes up as you move up the column of choices.

Remember, Adept magic works only within the element of the conjuring Adept. An Adept in Fire cannot, for instance, summon an icon to the band of Earth.

You may summon an icon and directly attack an opposing icon, but it takes extra magical energy to do so. And Adepts are immune from such attacks. For them, you must use icons already on the board.

HEAL - This spell cures half of an icon's wounds and all paralysis.

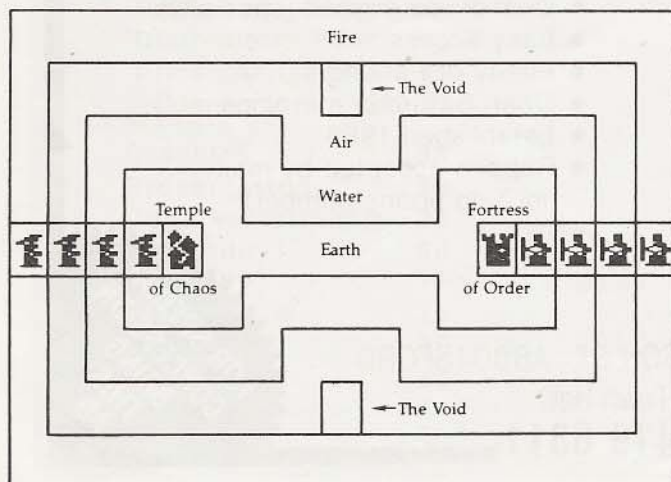
WEAKEN - Use this to cut an enemy icon's current lifespan in half.

IMPRISON - Cast this spell and the imprisoned icon cannot be moved. The cost of maintaining imprisoned icons falls on the imprisoner and not the original conjurer.

RELEASE - Use this when you can no longer afford to keep an icon imprisoned - or no longer need to.

BANISH - Very expensive to cast. On the other hand, an icon you can't defeat can be very expensive to try to live with. And occupied power points on elements without Adepts make very tempting targets.

APOCALYPSE - This spell begins a battle that ends the game. In that apocalyptic battle, your icon's lifespan, missile power, and missile speed depend on your magical energy,



LET IT ALL

icons remaining, and Adepts left, respectively. Use to put a hopelessly overwhelmed enemy out of his or her misery or as an act of suicidal desperation.

If you choose to lead Chaos into battle you will be able to control a number of elemental powers. Firstly, the Behemoth - this monstrous beast is your destructive heavyweight, his punch delivers death. Next comes the Siren, her screaming song saps your strength. The Ifrit is the swirling spirit of storm and air. Also under your command is the Firebird - a flapping, flaming, fearless fiend.

On the other hand, we have Order. The powers available in your arsenal are similar to Chaos: you have a Giant who hurls boulders at his opponents. The Kraken, so awesome is his power, causes tidal waves. The Thunderbird, symbol of order, defender of justice, lightning bolt hurler, and lastly the Salamander, the flaming lizard and fireball flinger.

Common to both sides are four demons fairly potent in destructive powers. They do everything from running you over to sucking your strength to paralysing you.

The Adepts themselves are effective in the field of battle as their missiles are controllable.

All this is very well presented on the Amiga in full stereo sound. And mega high resolution makes quite a nice game indeed. A very nice effect is the sound; when a character moves across the screen the sound follows him from one speaker to another. Impressive!

AUSTRALIAN COMMODORE REVIEW RATING CARD

Game: Archon II
Machine: Amiga & C64
Publisher: Electronic Arts
Distributor: ECP
Price: Amiga - \$89.95
Commodore - \$49.95

Graphics: 90
Presentation: 95
Documentation: 90
Playability: 87
Difficulty: 85
Sound: 99
Music: 75
Lastability: 93

Overall: 95

Comment: A very nice package on both Amiga and 64. Good for one or two players.

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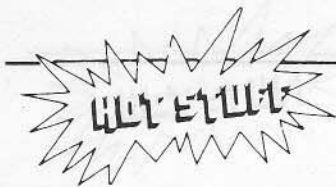
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Arcade Action

by John Hatchman

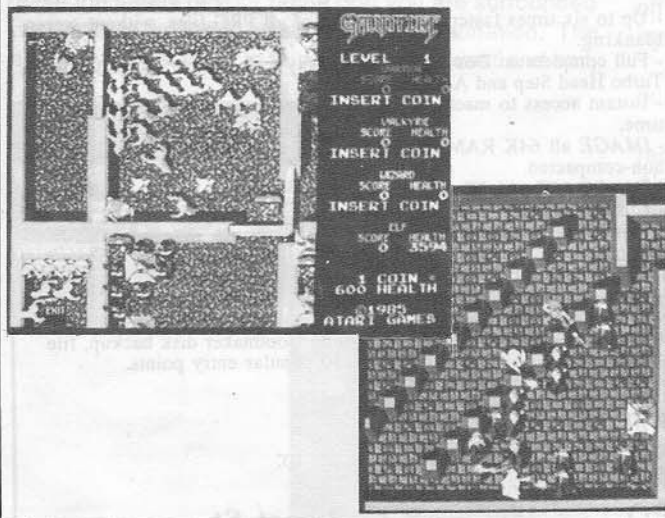


Well, here it is, the arcade connection. For the Commodore 64 and an occasional 128 release. Mail has been flooding in asking for a section on arcade conversions, and I'm here to do it for you.

In the following column I will be discussing how good arcade conversions really are. Don't tell me you haven't gone into a software shop and seen more than one game you want but you only have enough money to buy one. Well, that's where I come in. I will inform you which game would be better to buy for the right price.

This monthly column will help you work out all your buying doubts for the future and hopefully work out which arcade conversion is best. In this day and age of software, you have to be good to compete in the software games world. There are only a few well renowned software writers out at the moment. One of them is Tony Crowther, who has just finished writing his all-out shoot-em-up by the name of *Trap* (not bad, I may say).

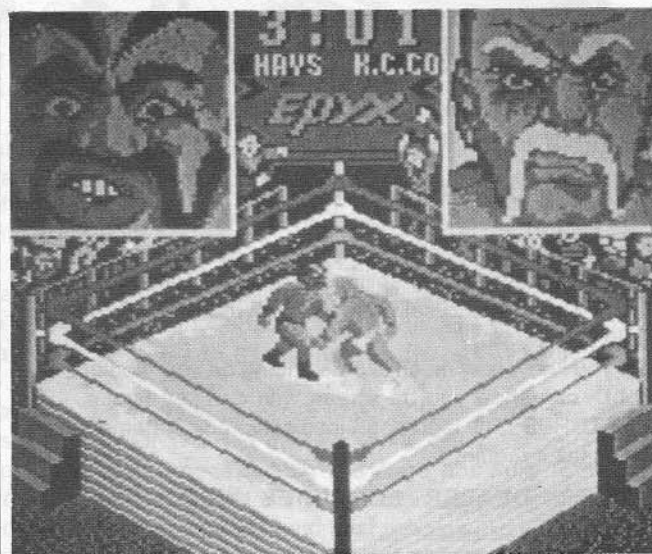
This month we are looking at some of the latest releases, which would have been released by the time you read this article. One of the hot-looking ones for late '86 is *Gauntlet*. This game has everything, and depending on the availability of memory, it will have speech. *Gauntlet* is copyrighted under Atari Inc in the arcades and is of one the best selling machines around today. It has sold more than 10,000 machines and is still growing in popularity. The home computer version will be brought out by the team that brought you *Boulder*. Like the arcade you don't get four alternate players but you do get two players who can still select one of the four characters. Gremlin will have a big hit on their hands with this one.



When you walk into a shop your first impression is your final impression of a game. One hint is to always ask to see the game before buying, and if they refuse, never buy anything in that shop again. Just to name two conversions that did and didn't work out - *Commando* and *Ghosts and Goblins*. *Commando* was considered to be almost a total flop, whereas *Ghosts and Goblins* was loved by all the Commodore magazines. They were both brought out by the same company and software team, and if any of your friends have a copy they will tell you the difference.

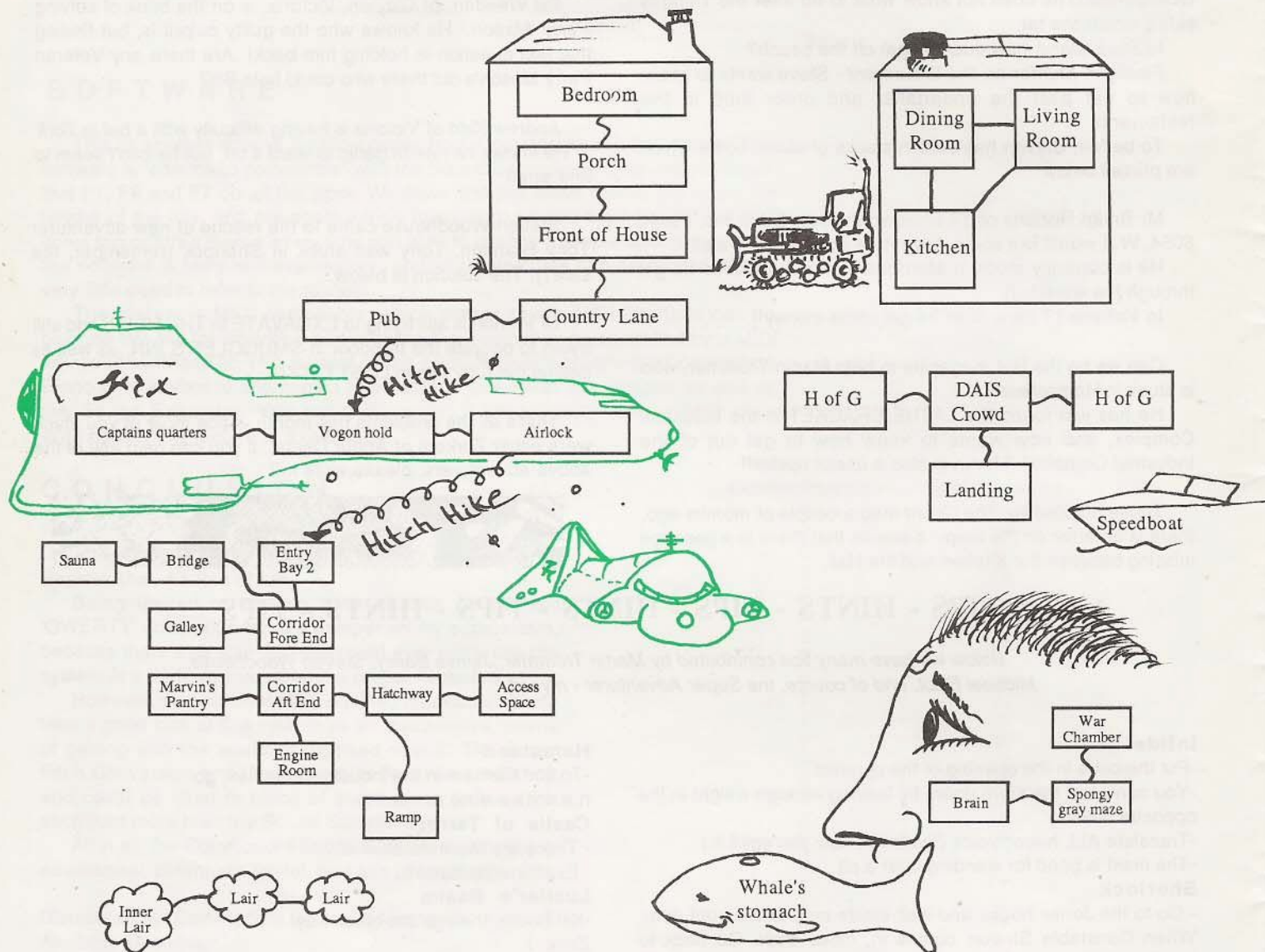
Very little has been heard on the 128 in 128 mode, and only a few games have been released for it. This may come as a shock to all you 128 owners. But don't despair, there a few already out now. They are *Rocky Horror Picture Show* and, a maybe, *Paradroid* and *Uridium*. That's all there is at the moment, but don't get worried, I will keep informing you of any 128 software being released in the present and in the future.

Another monster that is due to hit the computer conversions is *Championship Wrestling*. It will be brought out by Epyx and should grow in popularity over the slap-it-up version from Melbourne House. The game will be set out like *Fight Night*, but with more detailed graphics and sound. As you get into the game the audience throw more than just language at you, they hurl anything. Controlling the men will be made easy and free flowing. Keep an eye out for this one.



HITCHHIKER'S GUIDE TO THE GALAXY SPECIAL*SPECIAL*SPECIAL

Here is a special treat to ACR readers. The complete map of *Hitchhiker's Guide to the Galaxy*, along with many clues!! (Many of the clues were supplied by James Bailey).



Clues for Hitchhiker's Guide to the Galaxy

- Is the engine room really so bad?
- With the beast under control, you should try carving your name in the monument.
- You can order the Guards around!! (ie. drop guns.)
- Look at Arthur at the party.
- You'll get points for feeding the dog (sandwich).
- In the sauna, a pot is quite a FLUFFY object.
- The improbability drives reduce the effects of the missiles.
- Use the proper tea, it is better than the substitute stuff.
- Eat some fruit!!!

- The screen door has never seen anyone with tea & no tea.
- Clue: ask guide about intelligence.
- Trouble with Babel fish? Do the following: Take off gown:hang gown on hook:take towel:put towel over drain:take satchel:put satchel in front of panel:put mail on satchel: push de button!!!
- You must drink three pints of beer.
- Make sure you enjoy the captain's poetry.
- Lack of senses? Try smelling in a dark place.
- In speedboat, steer towards Rocky Spire and switch to Autopilot.

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0 2 i S o f t S m a s h H i t s

Game		Cassette	Diskette
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Iridis Alpha	Jeff Minter is back!!!		\$39.95
Boulder Dash	Endless combinations - design	\$39.95	\$39.95
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Indoor Sports	Family Fun - Air Hockey, Darts...	\$39.95	\$39.95
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Order Form - Order Form - Order Form

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Adventurers' Realm

by Michael Spiteri

Welcome to ACR's Adventurer's Realm. Because it is close to the end of the year, we decided to splurge a little and have a super-duper Realm.

Hitchhikers all over Australia can now gasp as they see how big the game really is. The map of this brain-teaser is printed among these pages, as well as many tips!! There is also an extra dose of clues supplied by readers and myself.

The letters continue to pour in, although many of you have sent in many hints & tips (thanks to all!!), I'd like to eventually compile a Reader's Top Ten! A regular feature in the Realm will be 'Funnies'. If any bugs or funny responses have occurred in your game, tell us about it! Another new section is "PLAY-BY-MAIL" clubs, which will list a whole range of games to join!

Letters to the Realm should be sent to:



Adventurer's Realm
20 Larool Crs
Seaford, Vic 3198.
or Viatel 378697780.

I'll reply to all of the letters if help can be given. Please send a stamped addressed envelope for a quicker response.

** Please state which computer you use.**

RAPID ROUNDUP *** RAPID ROUNDUP *** RAPID ROUNDUP

Here are many quick reviews of new and old games. Some of them will be available in the near future.

Leather Goddesses of Phobos

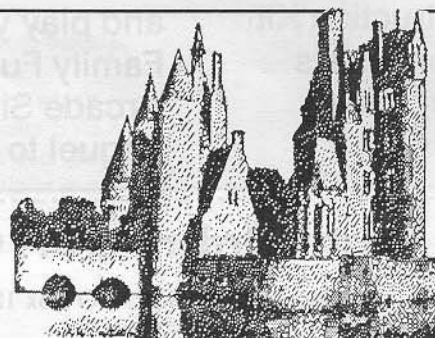
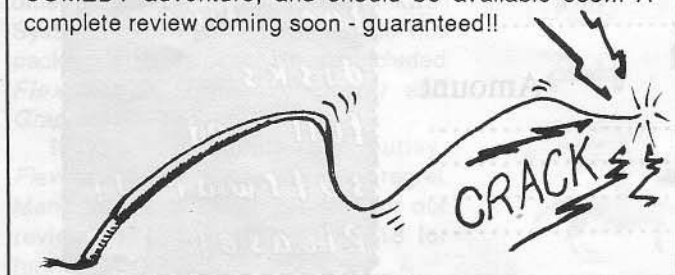
- On disk, by Infocom, for a large variety of machines.

This is the first in the range of Infocom's new COMEDY series. Also Infocom's first 'naughty-naughty' program. How's this for a challenge: You have to stop the Leather Goddesses' from turning the Earth into their own personal sex playground? (Don't start writing in asking "Who'd be stupid enough stop them?")

I haven't yet played the game (that's right....YET, as in Scott Adam's YOU CAN'T DO THAT...YET), but by reading the Infocom leaflet, I am convinced I am in for a hilarious & raunchy adventure.

The game has three levels (tame, suggestive, and shrewd) to satisfy all appetites. You'll discover why 'scratch&sniff#2' smells so familiar, and what happens in the luxurious chambers of the Harem!

The game comes complete with a 3D comic book and an enticing scratch & sniff card. *Leather Goddesses of Phobos* is a STANDARD LEVEL SCIENCE FICTION COMEDY adventure, and should be available soon! A complete review coming soon - guaranteed!!



Moonmist

- On disk, by Infocom, for a large variety of machines.

Moonmist is another new release from Infocom. In this game the adventurer visits Tresyllian Castle in Cornwall, England. It seems a friend is being threatened by a ghost, so she asks you to lend a hand. The castle is full of eccentric characters, all of which can be interviewed by the player.

Described as a 'classic gothic mystery reminiscent of Nancy Drew stories', it sounds very promising. Although the game has been designed with a female player in mind, it can be enjoyed by either sex.

Moonmist has four variations, each with a different guilty party, hidden treasure, and hiding place. Catalogued under 'Introductory Level', *Moonmist* is perfect for new adventurers who are not quite ready to face games like *Deadline*.

ADVENTURERS' REALM

Ballyhoo

- On disk, by Infocom, for a large variety of machines.

Infocom's most recent mystery story takes place at the circus. You discover the circus owner's daughter has been kidnapped (maybe she got lost in the luxurious chambers of Harem..ahem). It is your job to find her, and have a bit of fun at the circus as well. Oh yes, if you get too close to finding her, the kidnapper will set you up for a permanent slot in the freak show. Packed with many puzzles, *Ballyhoo* features fun & mystery all mixed into one. STANDARD LEVEL.



Perry Mason

- disk, by Trillium, for C64, Atari and Apple.

This is no doubt Trillium's best four-disk mammoth adventure game. You take the role of Perry Mason, hired to defend another desperate maiden. His client, it appears, was about to make up with her husband when suddenly BOOM! Hubbie no more! And guess where the gun is found - inches from our client's hand. If you think she's guilty then you've started the game on the wrong track. Who could it be? Was it the hubbies ex-lover? Or was it his business partner? It might have even been the mutt (who learnt how to use a gun after they stopped feeding him "Good-o"). You'll get the chance to cross-examine all of these suspects, as well as the doorman, ballistics expert, doctor and police chief, in the court!

You can also object to the prosecution's questions (providing you give a reason). Paul is there to investigate things, and so is good ol' Della for making phone calls, taking notes, and giving hints! *Perry Mason* features great graphics and great music. There is also a demo mode (note: for demonstrations purposes ONLY). It is a thrilling mystery game that will keep you up in the early hours of the morning. An ideal Xmas pressy!!

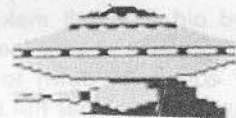
A Mind Forever Voyaging

- On disk, by Infocom, for most 128k machines.

This mammoth Infocom adventure bears a very slight resemblance to the novel *1984*. You take the role of a sentient creature commissioned to travel into the future to determine if the new economic plan will be of any use to the country.

The player travels ahead in time, through the years 2041, 2051, 2071, and 2081.

Infocom go overboard with the text, including some amazingly deep and meaningful descriptions. We also have an improved parser, designed for use with 128k machines. There are only a few problems, but as is *ZORK III*, the problems sure are toughies!! ADVANCED LEVEL is available now!!



Solid Software's
LOTTOcheck

19 7 15 37

for the Commodore 64 & 128 Computers.

LOTTOCHECK is where the *computer game* meets *serious computing*. Using it is game like, easy and fun for *all* the family but the consequences could be serious - if you call winning lotto serious!

- Developed by database and graphics experts, Lottocheck includes a database of all past GoLotto draws (over 6 years worth! on a free data disk) which are analysed for winning combinations. (You update the database as new draws occur).
- You can select any set of numbers (6-15) and Lottocheck goes through all past draws tallying up **all prizes** in each division, that would have been won with those numbers. For example **try a system 15** and see how it would have performed over the years, **without spending a cent**, apart from the cost of LOTTOCHECK which is less than a single System 10!
- You can select **random** numbers (6-15), which appear on screen as bouncing coloured balls.
- The GRAPH option produces a **histogram** of the frequencies of numbers drawn, up to the present.
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- Other options include list and print together with the usual database functions ADD, INSERT, MODIFY and DELETE which use professional fullscreen, form-like input screens.
- Package includes program and data disks plus extensive **handbook** on Lottocheck, winning strategies, and the maths theory of LOTTO.

NOTE: NSW GOLOTTO Version only, (Tattsлото version is not available to general public). Excellent value at \$49.50, payable by cheque(), money order(), or credit card:

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Solid Software,
P.O. Box 218,
Belgrave, Vic.3160



ADVENTURERS' REALM

The Pawn

- on disk, by Magnetic Scrolls & Rainbird, for most home computers (including BBC!)

Latest news is that the C64 version of *The Pawn* DOES feature graphics!! Although not elaborate as those on the Amiga and Atari ST, they are good!! The C64 and C128 versions both come in the same box, and are priced around \$50. For those not already familiar with *The Pawn*, this new game features great graphics, great vocab, great parser and great plot. Complete review coming soon....

The Boggit

- on tape, by Delta 4, for Spectrum 48K, C64/128 and Amstrad.

You all remember *The Hobbit*, Tolkien's famous book turned into an adventure game a few years back. Well, *The Boggit* is a hilarious send-up of *The Hobbit*. This game will have you in fits of laughter, and in pools of tears when you try and work out each problem. Good old Gandalf makes an entrance by dropping exploding chocolates at your feet, and New Price is Right fans will enjoy 'coming on down' to guess the value of Thornies 14th treasure! Remember the Green Door? That's here, along with the Green Toilet. Great graphics appear every now and then; these mixed with readable gothic text, large vocab and amazing atmosphere, make this game a winner!!

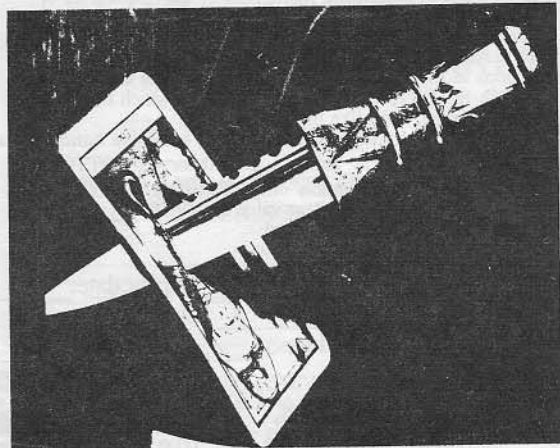
Nine Princes in Amber

- On disk, by Trillium, for C64, Atari and Apple.

This is Trillium's most recent four-disk adventure release, and offers quite a challenge to all adventurers. You take the role of Corwin, a Prince, and you have to become king, and have all your brothers and sisters alive & well & with you!

This game features very impressive cartoon graphics, and very exciting musical scores. Although the game features a very good parser and extensive vocabulary, the player is a bit TOO restricted in what he can and can't do, and in many cases, you'll find the game playing by itself!!

Despite this, I found their game very addictive, holding enough interest to satisfy my hunger. The game is based on Roger Zelazny's famous AMBER novels.



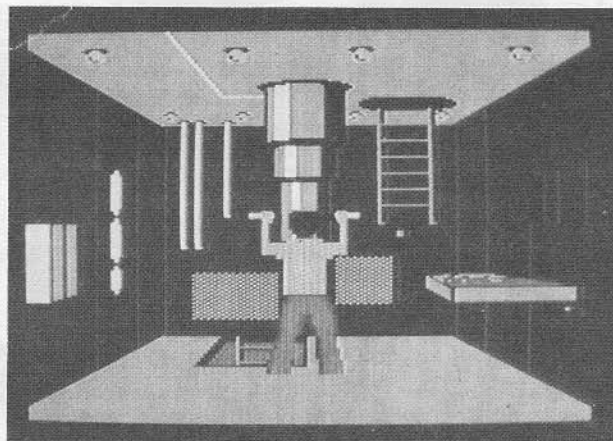
DECEMBER CHARTS

Adventure Games

- 1) LORD OF THE RINGS - Melbourne House.
- 2) THE PAWN - Magnetic Scrolls and Rainbird.
- 3) TRINITY - Infocom.
- 4) ZORK I,II,III - Infocom.
- 5) ULTIMA IV - US Gold
- 6) BALLYHOO - Infocom.
- 7) MIND FOREVER VOYAGING - Infocom.
- 8) HITCHIKER'S GUIDE - Infocom.
- 9) THE HOBBIT (Disk) - Melbourne House.
- 10) BORROWED TIME - Activision.

Strategy Games

- 1) SILENT SERVICE - Microprose
- 2) MERCENARY II - Novagen
- 3) CRUSADE IN EUROPE - Microprose
- 4) DEEP SPACE - OziSoft
- 5) ELITE - Firebird
- 6) MERCENARY - Novagen
- 7) THEATRE EUROPE - PSS



ADVENTURE FUNNIES

This month we'll have a few laughs on the ZORKS! I'll need more funnies if this is to become a regular section!

ZORK I - You can have fun opening the grating while the leaves where still on it. You can even burn the black book, damage the painting, do nasty things to the bodies in Hades, or even try to take yourself!

ZORK II - You can attack the Princess, or even more gross, do other things rather than kissing her! In the Topiary, try WAITing. You can cast spells on the gnome, or even say HELLO to all the characters you meet! Have fun pointing the wand at yourself, or kissing the wizard, or even PLAYING WIZARD. Finally, try eating a ZORKMID.

ZORK III - You can get eaten by a fish or ROC. If you are hungry, eat the algae! You get many funny responses when you try to burn things that shouldn't be burnt! Finally, have a go at walking through the swamp!

ADVENTURERS' REALM

PROBLEMS - PROBLEMS - PROBLEMS - PROBLEMS

Any problems sent in will appear in Adventurer's Realm in Home Computer GEM, & Australian Commodore Review - that way we increase the chances of getting the problems solved.

Steven Woodhouse of S.A is stuck in many games. In *Questprobe 3* he does not know what to do after the Thing is safely under the tar.

In *Skull Island*, how does he get off the beach?

Finally in *Murder on the Waterfront* - Steve wants to know how to get past the undertaker and order food in the restaurant!

To be fair, Steven has sent in stacks of clues, some which are printed below.

Mr Bryan Roberts of 17 Chedworth Way, Eden Hill, Perth, 6054, W.A would like some Adventure Freaky Pen-Pals!!

He is currently stuck in *Mordons Quest* (how does he get through the waterfall).

In *Valerie 17* (how does he get some money!).

Can we be the first magazine to help Martin Trommer, who is stuck in *Hampstead*?

He has just found the LATHE BRACKET in the Industrial Complex, and now wants to know how to get out of the Industrial Complex! Martin is also a useful tipster!!

Those puzzled by *The Count* map a couple of months ago, there is an error on the map. It seems that there is a passage missing between the Kitchen and the Hall.

ZORKER OF THE MONTH goes to James Bailey from Victoria. He was stuck in all three ZORKS! He does however, contribute to our Hitchhiker's Guide special.

Bill Weeden, of Clayton, Victoria, is on the brink of solving *Perry Mason*. He knows who the guilty culprit is, but finding that last question is holding him back! Are there any Veteran *Perry Mason*'s out there who could help Bill?

Andrew Kidd of Victoria is having difficulty with a bat in *Zork I*. He knows he needs garlic to ward it off, but he can't seem to find any!!

Steven Woodhouse came to the rescue of new adventurer Tony Branson. Tony was stuck in *Sherlock* (remember, the safe?). The solution is below...

Di Vernon is still trying to EXCAVATE in THE HELP, and still trying to operate the trapdoor in SMUGGLER'S INN, as well as getting the ruby eye in LOST CITY!

That's all the problems this month, since most of you stuck were either Zorkers or Arthur Dents! If you can help any of the above adventurers, please write in!!



TIPS - HINTS - TIPS - HINTS - TIPS - HINTS - TIPS

Below we have many tips contributed by Martin Trommer, James Bailey, Steven Woodhouse, Michael Elliot, and of course, the Super Adventurer - myself.

Infidel

- Put the cube in the opening of the pyramid.
- You can open the store doors by leaving enough weight in the opposite hallway.
- Translate ALL hieroglyphics (that's not how you spell it.)
- The mast is good for standing over a pit.

Sherlock

- Go to the Jones house and wait inside next to the front door. When Constable Straker comes in, close door. Go back to London, and get a cabbie to Portman St.

Sometime Tuesday morning, Tricia will come. Go inside and open her safe. You can also open Basil's safe on Tuesday. It contains.....

Hobbit

- To get past the dragon, tell Bard to "shoot dragon". Go into the place near the black river and get caught by an elf. Wait until you are let out of the dungeon, then go to the barrel room. Wait until the Butlet throws a barrel then jump onto the barrel. Also drink wine and then sit.

Hamstead

- To find the item in the industrial complex, go n.e.e.ne.e.e.ne.n.

Castle of Terror

- There are two mills!!!!
- Examine the barrels.

Lucifer's Realm

- Kill Booth, then go the other way!

Zork I

- The thief can open the egg.
- Kill the troll with the sword.
- Axe is a red herring. (Although it can be used as a weapon).
- The word ULYSSES will kill the Cyclops.
- ECHO for the Platinum Bar.
- The machine makes diamonds - coal needed.

Zork II

- You can read the cakes.
- The basket & canvas is a balloon.
- Burn paper in the receptacle.
- The north wall is the Vault's exit.

Compatible or not compatible

It would seem that a lot of people are having problems with computer/printer compatibility. Unfortunately I'm not going to help anyone with the answers because I don't know them myself. I also have a few problems with computer hardware/software incompatibility.

Having read reviews of the Skai-64 Superdrive, I purchased one of them to go with my C-128 and Riteman C+. If funds had permitted, I would have bought the new 1571 disk, but alas, I could not wait.

Problem One

While it is true that the Skai-64 (late model with external dip switches) is fast and reliable and will save and replace, it will load and run *Timeworks Data Manager 2*, but will NOT format a data disk from within the program. I have even tried using a pre-formatted disk to overcome this problem but with no luck at all.

I do a lot of voluntary work for which my computer is invaluable, but not being able to run a dbase program is making my job very frustrating. Has anyone had a similar problem or is there a dbase program that WILL work properly with my set-up.

Problem Two

I am also experiencing problems with the Riteman C+ printer. I can't get it to accept printer codes while using *Timeworks Word Writer*. My dip switch settings are: 3 on, the rest off. Any suggestions?

Problem Three

The Print Shop works fine, but only on the flip-side of the disk. I cannot get any satisfaction in Epson (Plus mode).

By way of a contrast to the above problems, I now offer you an oddity. Having a C-128, I have naturally run the CP/M systems disk in the Skai-64. To my surprise, it loaded it and I can access ALL of the directory with no problems at all. I can't however, load Microcal's Hands on CP/M Plus, or change screen/character colours.

I would be grateful for any assistance that anyone could offer.

Stuart Rolfe
Carlton Sth, Vic.

RAP BACK - RAP BACK

Dear Sirs,

I look forward to seeing each edition of *The Australian Commodore Review* as it appears in the newsagents and am glad that there is the opportunity to be able to write with a query or two. My particular queries are:-

1. After an hour or more of using the C64 in warmer weather, I find that the characters on the screen tend to flicker. If I change the cursor and background colours to black or grey, the problem seems to be alleviated. In your opinion, would this be a fault of the C64 or of the television that I use as a monitor? Tuning the TV to give a black and white image does not cure the flickering.

2. I have a 'Simons Basic' cartridge and 'The Final Cartridge' which I would like to be able to use at the same time. This poses two problems - a. Is a cartridge expander like those advertised in American magazines, available in Australia? - and - b. Would the two cartridges work together if it were?

3. Could you recommend a good, general purpose, preformatted, disk based Word Processor that has a wide

selection of commands and facilities. Price is, as always, a major consideration! In the future I hope to put the Word Processor to some serious commercial use and wondered if there is an economic electronic typewriter on the market that can be linked to the C64 as a quality printer.

I have enclosed a stamped, addressed envelope in the hope that you are able to answer my queries but will look forward to reading the next edition of *Commodore Review* in any case.

ED: Problem one is definitely associated with the computer. Could be a bad video RAM or VIC chip.

Cartridges often do clash, has anyone tried the above combination? A multi-cartridge mother board has been available on and off through various people. Try Computer Haven, Maroubra NSW, phone (02) 349 2366.

Wordcraft is one of the most professional wordprocessors around, but personally I still use Easyscript.

READERS' PAGE

Dear Sir,

Having just upgraded to the C128/1571 drive (from a C64/1541), I was particularly interested in the project by James Y. Cottrill (*Commodore Magazine*), on construction of an 80 column cable for the 1701 monitor. I would just like to advise, for those not in a position to make their own cable as per this article, that Commodore can supply an accessory cable (designed for use with the C128 and 1201 monochrome monitor, and available through any Commodore dealer) for about \$12.00. As far as I am able to ascertain this cable is identical in function to the one described in the above article. You may like to confirm and perhaps publish this information for other readers.

J.R. Whitehurst
South Penrith NSW

Dear Editor,

Following your article by Denis Hare in the September 1986 issues "More Nourishment for the MPS 802(1526)", I wrote to Laser Soft for details on COMMUN-I-INSTALL. The letter was returned - not know at this address.

I then wrote to CW Electronics in Queensland and received back a letter for their official liquidator advising that CW Electronics was in the hands of the liquidator and was not longer trading.

I am still interested in the software package for the 1526 and wonder if you are able to help please.

Mr G R Coates
Thornbury, Vic.

ED: An unfortunate state of affairs, perhaps a reader may be able to help?

Dear Mr Editor

My heart goes out to David Marsh of Kincumber for the heartless way you treated him (and all the other readers, too). Why did you do it? I know that leaving lines out of programs is fun ... but terribly sordid. So I hope you make it up to David by sending him the next couple of issues of ACR for free, to make up for your sins.

Of course I tested the program and I even put a picture of Inspector Gadget on top as well. You don't suppose for a moment that I would so easily forget my own early days when anything (or everything?) typed in from a magazine was guaranteed NOT to run?

Here's an offer. If anyone has problems with anything I put out, write to me (C/- the magazine) or ring me (062 -88 3584) at any civilised hour of the evening, and I'll try to help. Or better still, ring the Editor any time between 3 am and 7 am to protest.

Paul Blair.

ED: Heartless indeed, we are sadists of the worse degree. Only kind hearted individuals such as Paul can save our readers from further fortune. The matter has been severely dealt with.

G'day etc,

I have a problem with my 1570 disk drive. A BIG problem. When I first got my 1570, (second hand unfortunately!), I observed that it corrupted disks by randomly writing errors all over the place. The majority of these were checksum errors in data blocks; an error which the manual (which, incidentally, never once mentions the 1570!), said was probably caused by faulting grounding. I've been an electronics/computer hobbyist for some years and I knew my way around the inside of the drive. So I made a fairly comprehensive examination for grounding problems on all the boards; I found none. Then my attention wandered to the serial cable from my 128. All conductors were conducting. After a lot of stuffing around, and after finding that the chassis ground of the drive was not connected to the serial ground of the cable, I thought I'd fixed the problem by connecting the 2 grounds. Well it did improve things quite a bit. However, instead of the drive writing errors to the disk every time I used it, it now writes errors (same type) about every 7 to 10 uses, depending on the programme.

What I am hoping you can tell me, is do any other 1570 owners have the same problems, and if so, can it be fixed? I have heard from a few people on Viatel; one fellow was so impressed with his 1570 that he was going to get a 1541! Anyway, if you or another reader can help, I would be much obliged. Thanks.

John Mason
Leeton, NSW.

PS Does there exist an updated ROM for the MPS 803 printer, with perhaps true descenders and better graphics? Hmm, Prithee?

ED: Paul Blair may know about the 803 ROM's - Paul? Regarding the drive - it is not a problem we've encountered previously. So over to the readers.

Dear Sirs

I recently purchased a Commodore Amiga and although I am more than pleased with my purchase, I would like to be able to use some of the programs published in magazines such as yours.

My concern is the PEEK and POKE routines. I gather that these commands refer to absolute memory addresses and that the data changed/retrieved is different on different machines.

Could you please provide me with a conversion chart for the computer 'X' to the Amiga so that I could load and run these 'magazine' programmes.

K Harrison,
Avondale Heights, Vic.

ED: Not possible at all! Amiga and C64 are totally different. Some pokes may be converted, but you would need to know a lot about both systems. On the whole, forget it.



Your connection to the outside world is done through a modem. (This stands for MODulator-DEModulator and I explain precisely what it all means later on.) For the moment, accept that it changes the signals coming out of your computer into a form acceptable to the telephone wires they are going to travel down. At the same time it takes the signals coming in from the telephone wires and converts them into a language the computer can understand.

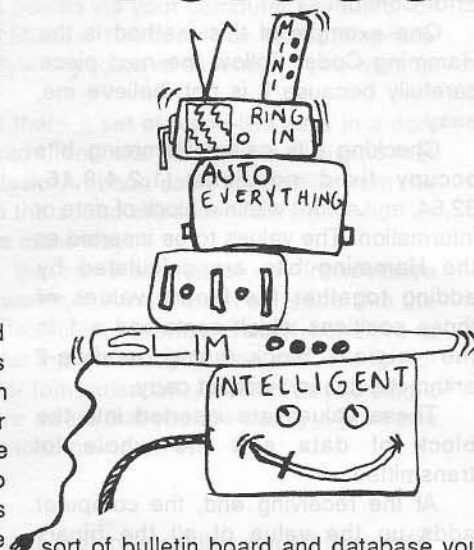
Two types of modem

Hardwired and acoustic coupler. I've mentioned them before, but it bears repeating that while the hardwired modem will always give you better results than an acoustic coupler, it doesn't mean to say an acoustic coupler does not have its uses. I transmit messages from computer to computer every day and sometimes the only way I can work is with an acoustic coupler. True, it is not as convenient as a hardwired modem. But it does the job - and it does it remarkably well.

Software

You will undoubtedly need a communications program to allow you to use your computer with the greatest possible ease. Some programs are long, complicated, cover every possible eventuality - and, sadly, cost a lot of money. Others are cheap and cheerful - but leave out all the fancy bits which means you have to do all the work of entering information before you can sign on to a database or a bulletin board. It is a question of what you can afford and the

Telecomputing



sort of bulletin board and database you are going to be hooking into.

If you are going to be making considerable use of overseas facilities then you are going to need a pretty sophisticated program. If, on the other hand, you are only going to be accessing bulletin boards and databases in Australia, then you can probably get away with the simplest of programs - possibly even a free one you can download from a bulletin board.

Parallel and serial

With 8 bit machines, currently the most widely used type of computer for amateurs, the information travels around the inside of the computer on an 8 lane wide highway. (From which you can make the logical and correct presumption that in a 16 bit computer there are 16 lane highways and in a 32 bit computer there are 32 lane highways. In order to confuse you thoroughly, they have called the entrances and exits to these highways - buses. Why didn't they call them trams, or trains, or taxis? No one knows. Back to the 8 bit machine.)

The 8 bits move around side by side as they go from keyboard to microprocessor to screen and to printer. They are travelling side by side in a close harmony which is called parallel transmission because all of the 8 bits are parallel to each other during their travels.

by Gareth Powell

But when the information bits leave the safe superhighways of the computer to connect with the wide world outside, they find that there are no more superhighways.

Only narrow paths down which they can tread singly in Indian file fashion. And this is called serial communication.

It is not difficult to remember the difference between parallel and serial once you have those images firmly stuck in your mind. It is possible to send information from one computer to another computer in parallel proved they are close enough and the pathways are wide enough. But not via the telephone.

With the telephone you are restricted to single lane working - not because they are digging up the roads again but because the telephone system was originally designed to carry voice signals and we have to work with what we have got for the time being. (There may be some changes in this situation in the years to come with the possibilities of fibre optics and digital transmission, but this article is dealing with what is possible and feasible here and now).

To leave the computer and get on to the telephone line, the bits of information must, like guardsmen on parade, re-form so that they are no longer marching eight abreast but are walking in single file.

To do this you need a serial card. These differ from computer to computer - on some they are even built-in - and your best bet is to check your instruction book to see what is available.

The serial card, no matter how it is fitted, takes the information that is marching in parallel and squeezes it through a funnel until it comes to an outlet, the RS232-C socket, in single file.

While all those eight bits are marching along side by side there was no problem in finding out where one set of eight bits started and ended because they were neatly arranged in row. But once you

have them in serial - a long thin line - the situation becomes slightly more complex and you have to think of ways of getting the computer at the other end to know exactly where one set of eight bits starts and then ends.

One way of doing it is to have both the computers in perfect synchronisation and send the information down in fairly substantial bursts. This is often done in commercial installations where one mainframe computer is talking to another.

In the sort of set-up we are describing, this is by no means convenient as one kind of computer talks to another through a sometimes dodgy set of telephone lines.

Protocols

So we have to have some way of telling where a set of eight bit starts and where it ends. Which is where protocol comes in. The word originally meant where people of different rank sat at the dining table, now it means it means where bits of different importance sit in the transmission chain.

Let us for the moment accept that the information we are sending down in 8 bits is a single character.

To show where it starts we have a start bit. And to show where it finishes we have a stop bit, sometime two so that the machine doesn't get confused into thinking that a start bit is a stop bit and vice versa.

Sometimes there is a cunning error checking device also built in, called a parity bit. What this does is add up the total of bits of information being transmitted in that small segment and say that the total will be either odd or even. When the computer at the other end receives the information, if the count does not agree with the parity bit obviously something has gone wrong and the receiving computer asks for the information to be sent again. This error trapping method doesn't get all the possible mistakes by a long chalk - but it is very useful in letting both computers know when something has gone haywire.

This is divided by a pre-determined number called a generating polynomial using modula-2 (binary) arithmetic. Everytime I contemplate this method I

have to take two aspirin and a lie-down so perhaps we will move right along to the third method which is called "Forward Error Control".

One example of this method is the Hamming Code. Follow the next piece carefully because it is not, believe me, easy.

Checking bits called Hamming bits occupy fixed positions (1,2,4,8,16, 32,64, and so on) within a block of data or information. The values to be inserted as the Hamming bits are calculated by adding together the binary values of those positions which contained a 1 in the original block using modula-2 arithmetic (binary) without carry.

These values are inserted into the block of data and the whole lot transmitted.

At the receiving end, the computer adds up the value of all the binary positions containing a 1 including the Hamming Bits, and the result should be 0 which means there is no error.

If the answer is a positive value then something has gone wrong and the number indicates the position of the erroneous bit. This bit is then automatically changed from 1 to 0 or vice versa.

If you didn't follow that, do not worry - neither do most people. But it is helpful to know these error checking systems exist. The fact that you at least know about them means no one can try and blind you with science.

A piece of advice.

When you are setting up the protocol for your computer through the software, if all else fails set it as 8 bits with no parity and one stop bit. This has several advantages. It will work with most terminal systems which tend to ignore parity anyway. And it also allows you to down load computer programs which are written in binary rather than in BASIC.

This business of protocols can be a nuisance and sometimes you will get bitterly frustrated in trying to hook up to a computer which seems to be using a protocol designed, by a Lower Slobbovian. When that happens, hook into a bulletin board that you know you can access easily and ask for help.

In almost every case you will find somebody somewhere who has had

precisely your problems using your computer and your modem to access the system that is giving you trouble. They will know the answer and delight in giving you it. You, in return, will be able to help some other absolute beginner who gets in a mess. Bulletin board users are a friendly lot.

This is far better than hammering on on your own and getting to a state where you tear the computer out of its socket and hurl it though the window, doing serious damage to an innocent passer-by.

This question of protocols is one of the biggest stumbling blocks in the way of communication progress. At the level we are talking about, it is a situation that can be easily handled with a certain amount of intelligent perseverance.

But when you get into the wild and wonderful world of mainframe communications between one computer and another, it becomes so complicated that it is a science in itself. I once spent six months sorting out protocols for a Wang computer set-up and I have never been quite the same man since.

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Computer Health

The home computer boom appears to have reached a peak as manufacturers now refine the existing computers, adding more memory and peripherals.

But although this boom has been widespread, little has filtered through to the home user of the concerns or education about dangers of computer use.

Major companies that require staff to sit for hours in front of a terminal, keying in endless lists of figures, or copying vast amounts of written copy into the computers, have spent thousands of dollars on equipment and training to prevent some of the problems that occur with the change in the work practices that computers have brought.

Debate has been constant on issues such as RSI, with terms like Ergonomic, Work Station and the like, being thrown about.

But sadly, little of this has been aired for the home user, who, unless they take proper precautions, may develop many of the problems associated with the use of computers.

Consider a person in my situation.

Working for a country newspaper from 9am to 5.30 pm on a mainframe computer and then coming home to tap away at the micro, can lead to almost 10-12 hours at the keyboard.

Not that the great number of home users are in the same boat, but the years to come will see more terminals in use in the workplace and at home.

To overcome any problems, such as Repetitive Strain Injury or eye strain, it is necessary to treat the home use of a computer as seriously as business use. Often more so because it is very easy to become engrossed in your own programming.

Repetitive Strain Injury

RSI is an unfortunate name which generally applies to strain on the hands or arms from continual keyboard use.

Although this is one injury, the term covers everything from tennis elbow to house-maid's knee.

There has been a lot of bad press about RSI and it does appear frequently on worker's compensation claims, leading to claims that it is a problem similar to the bad back syndrome and not taken seriously.

One thing that is known about RSI is that poor work practices can contribute, and many factories or offices employ ergonomic principles to combat the problem.

Such things as the siting of keyboards, chairs and desks can be important.

The length of time on a keyboard also has to be considered when trying to prevent RSI. Consider holding a brick in your left arm, fully extended, for a while.

You could do it for a short time, every now and then, but not all day.

Van Kempen

The same can be said for keyboard operation.

Constant typing with the arms held static as the fingers skip across the keyboard can put strain on the arms and the tendons which help manipulate the fingers.

To overcome these practices, many businesses and unions enforce compulsory breaks from the terminal. Some authorities advocate a ten minute break each hour, some on a two-hourly basis.

There are some groups which stress the importance of "Pause Gymnastics" where during each break users perform some group exercise. One typing pool in Canberra has installed mini trampolines to give typists exercise during breaks.

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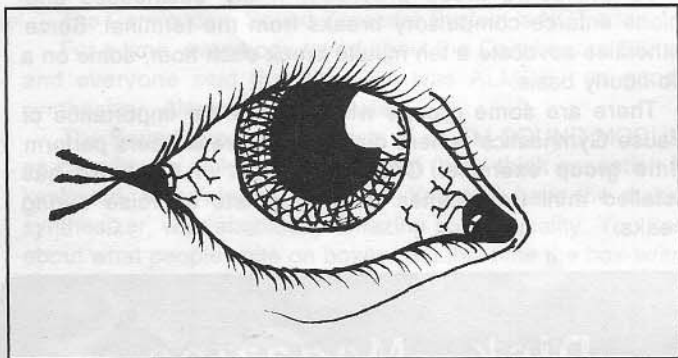
Eye Strain

This is another area of great concern for people who constantly sit in front of monitors.

Again this area appears to have been neglected when we look at the home computer user.

Many computers feature a 40 column display with a bright background.

One database I have been using features a cyan (blue) screen, with black letters and an 80 column display. Half an hour of use and your eyes feel like someone has been sandpapering them from behind.



It took all day but I finally broke into the coding and changed the colours, not without muttering a few curses at the authors.

Take a look at business computers. Green and amber screens dominate the office, with colour monitors being an option on most.

Not that I think we should all zap the aliens in splendid monochrome.

But there is room for improvement on the screens that exist at the moment.

Screen tilt and angle are also important in the office but have been overlooked for home use.

Most business monitors have a base mechanism, or a tilt mechanism built into the monitor. If the reflected light is too bright the screen can be adjusted. At home with the small colour tele we're stuck with the one angle.

Other important factors are posture, seating and the height of the keyboard.

The first hurdle to overcome for the home computer user is that the computer may not have a permanent home, where it can remain set up while not in use.

If you're fortunate to have a spare desk or office then it may be easier.

For those who use the family television it may mean a bit more effort. Although ergonomics is described as a science, it can be translated into very simple terms for the home.

Equipment can be as basic as bricks and boards. I will try and outline my own work station with reference to other ways to reach the same goal.

(This is for programming or typing in lengthy listings, games playing may be different but observing the same principles.)

Desk

If you can commandeer the spare desk or table for your computer, you are on your way. The desk should be deep enough to allow the monitor to be between 40cm and 70cm away from your face.

It should also allow enough room for a desk lamp, open books or notepads without cramping the keyboard. A copy holder is ideal for typing listings. This can be situated to the left or right of the monitor so the user is not constantly looking from the flat desk top to the screen.

A piece of masonite or a clipboard on an angled base is all that is needed. Use a bulldog clip with a piece of card as a line guide, it's easy to check typing this way.

Lift the monitor off the desk so that while seated you look directly at the screen, without bending your neck too much. A couple of house bricks are as hi-tech as you need to get, but a shelf added to the desk could help. I have placed my monitor on a shelf made from two bricks and a board, with another two bricks on top of that for the monitor. Try and situate the desk so that there is no reflection on the screen.

Chair

Ergonomic chairs can cost up to \$900, so don't start saving, a new disk drive would be a better investment. A good strong chair is OK for home use. If you have an office chair it's a bonus. The chair should give good support to the back, and preferably not have arm rests.

One problem with chairs is the pressure on the legs if the chair is too high. For children this is very important as it can cut off the blood supply to the lower leg, causing cramps. The chair should be high enough to allow the lower arm to be at right angles to the upper arm when using the keyboard. This then means user's legs may not reach the floor and a foot rest can be used. The Sydney Yellow Pages are ideal! Seriously, a block of wood or similar can help lift the upper leg free from the edge of the seat. My kitchen chair, with a bit of reinforcing, does the job at little or no cost.

Monitor

Use the contrast and brightness controls! If the computer allows it, change the colours on the screen when you type in listings. A new colour combination every now and again helps relieve eye strain. Try a dark background with light lettering, remember that business computers use green or amber screens. If you can change the type size use the 40 column size for listings. Use a desk lamp and keep bright lighting to a minimum to prevent glare.

This is a very basic guide to some of the precautions the home computer user can take. For those who use the kitchen table as their desk; you can use some of the tips to make yourself as comfortable as possible.

In any case, we will be tapping away at the keys for many years yet and I for one don't want anything to stop me.



"Cathay Pacific gave us this free card for all our shopping discounts."



"A made-to-measure suit. How do they do it for the price?"



"You don't get Chinese food like this back home."



"There's more to do in Hong Kong than just shop."



"Jamie gets wired for sound."



"Our hotel looks even better from the harbour."

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